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WILL-POWER AND WORK

BY

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Authorized Translation by
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SECOND EDITION

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INTRODUCTION

By The Translator

Most of us experience a twinge of regret now and then that we know so little. The only persons immune to these pangs are those whose self-assurance convinces them they know everything—or at least something about everything. Give them an hour or so, and they will ascertain all recorded information on any subject about which their knowledge is in the slightest limited. Fortunately for the progress of mankind, such self-confident know-alls are in the minority.

The great majority of men and women, on the contrary, are mistrustful of the knowledge they actually possess. What is worse, they repine at the thought that they have missed or misused so many past opportunities to enrich their mind; and can see few, if any, in the present or future. The business of gaining a livelihood absorbs all their energy; the routine of the day's work dulls their mental appetite for aught but distrac-

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tion and amusement. In time even the counter-irritant of diversion palls, and they gradually reach the melancholy conclusion that all they can do is drudge day in and day out.

Meanwhile they try to stave off the encroachment of illness, and, if prudent, keep laying aside a thrift portion for the inevitable rainy day of age that never clears, but grows cloudier. They may be employers or the employed. Whichever they are, their condition must be one of a certain disorganization, mental and physical, if they have not learned that the surest means of happiness is loving, not hating work.

"Work?" they will query. "Why, that's just what's the matter with all of us. We have too much work—nothing but work."

What they really mean is that they have too much routine, which is drudgery, whether it be a routine of toil or of pleasure. They have not learned that a variation of mental diet is as beneficial to the soul as a variation of physical diet is to the body.

Many pay scrupulous attention to the care and development of their physical being and never pause to reflect that their intellectual

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constitution also requires training. They shrink from the effort involved in study or reading, much as a child seeks to evade a dose of unpalatable medicine. In the world of thought such adults move as ignorantly as children would in the material world if they had not parents and guardians to supervise their behavior. They fail to realize, whether they are financially prosperous in their station or able only just to get along, that their mind is the mainspring of their existence.

In nine cases out of ten the mind is not developed to the utmost of its possibilities; and the fault lies not in our fate, our upbringing, our environment, but in ourselves. To root out this fault we have also in ourselves a twofold instrument, namely, willpower and work. This book shows us how to fashion and employ that intellectual magic wand with which those humble, persevering toilers we know as "great men" were able to conjure up the marvels of achievement that assured them a full and rounded life principally and, only incidentally, the fame that marks them for our respect and emulation.

Work was the secret of their happiness,

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first of all, and then of their power of production. The love of work made what pessimists call the "dull round of existence" a succession of radiant days for them.

But to love to work, we must know how to work; and to know how to work is to be work's master instead of being its slave, as so many are from their schooldays onward. Such draft-dodgers in the great war of life escape toil and discipline at one period only to be subjected to heavy penalties at another. In intellectual effort, as under arms, the healthy, normal person obeys orders and "carries on."

If in the course of our education we have just managed to pass muster by hook and by crook, we have cheated no one but ourselves. Later in life we pay the price for such slacking with usurious interest, when we find ourselves condemned to an occupation repellent to our aptitudes and taste, and yet the only job for which we are qualified in consequence of our shiftless training.

Let it be conceded, however, that we have taken or do now take advantage of the educational facilities at our command to the best of our power. For to the wise, every

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day they live is a day to learn. Then, we must ask whether that power of ours is as efficient and productive as it should be? Is it under the ever-watchful direction of a method of procedure that is tried and true as the compass to the pole-star? Those of us who are honest with ourselves will admit that the greater part of the brain-work we do is under no such guiding method. The result is that a great part of our mental effort is either foiled or wasted.

We learn, early in life, what we learn from instructors and books, either unwillingly or too willingly and voraciously. In the first instance our intellectual revenue is incomplete and deficient. In the second it is a jumble of knowledge that is not negotiable. The habit of defective method clings to us as we enter upon our business or our professional career. The result is that we do not attain the success and contented state to which we feel we are entitled, and to which we are in very truth entitled.

We have not come into our own simply because we have not pursued the correct course. We do not even now come into our own because we do not right our course. But

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here is presented our great chance, whether we be twenty, thirty, forty or fifty years of age, and whatever be our occupation and aims so long as they are dependent on every man's highest possession—his mind.

To help us develop that supreme birthright toward the formation of ordered, vivid intelligence and sound individual personality is the purpose of this book. For those who wish to achieve such self-development it is written by one of indisputable authority. President of a great French university, Dr. Jules Payot has reached that eminence through a long career of varied and distinguished educational experiences. Experience teaches, he shows, and experience alone positively teaches us the things we learn from instructors and from books.

No knowledge we possess is really ours unless it be merged into the essence of our personality. Because he makes this sense of experience so plain and comprehensible to us, his words of wisdom are food and drink for the mind no matter at what period of our life they fall within our ken.

The extent of Dr. Payot's reading as revealed in this volume can with propriety be

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termed enormous. Yet we never feel that he is imposing information on us, which we may or may not absorb, according to the receptive state of our mind. Instead, he proceeds along his way of intellectual discovery and we follow him, at once fascinated and stimulated by making the same discoveries in ourselves of desire and capacity for work and its rich rewards of strength and content of soul.

We follow him as a sure guide, who yet demands that we test every observation, every step of the way for ourselves. His object is not to show us what he can do, but to have us discern what we ourselves can do by daily effort and perseverance.

From the very outset, when he examines the French educational system with such searching scrutiny, we find ourselves unconsciously analyzing our own system by way of parallel. The disclosure that the essential fascination of study is disguised in false colors of supposed attractiveness strikes us with surprize and something of dismay. Later we are freshened and encouraged when we realize that true pleasure consists in the perfect functioning of the human or-

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ganism when our soul is aglow with ardor, energy, gayety.

In this state we have zest and enthusiasm for intellectual effort, that most exhilarating of enjoyments. We are stirred with ambition to extend and expand our mind in our chosen career. We become conscious that merely to arrive at a certain position in life and stay there without growing from day to day in mental development is to stagnate, and that stagnation is decay.

If we do not grow each day in our business or profession, as that business or profession itself grows, we find our competitors and our colleagues outstripping us in the race. We fail to gather new strength each day to meet the constant succession of tests that are incidental even to the most sheltered lives.

Nothing is stationary in nature or in human nature. Progress is continuous; and if we do not keep step with it, we lag behind and gradually fall from the ranks, to lie helpless and hopeless by the wayside.

But the moods of energy and ardor and ambition, which are mentioned above, are so fleeting. We lament that they do not last

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long enough for us to carry out any of our wishes and aspirations. What is worse, as time goes on and we become more accustomed to the routine of our environment and occupation, we find these moments of rare occurrence. We wonder rather despondently why we can not summon them at our command.

We are hardly to blame for repining as long as we remain in ignorance of the fact that the normal stimulant of the mind is our will-power. Through our will-power and with proper disposal of our forces we can always have a fund of energy to draw on. That may be true, it will be said, but what about having the time to make use of such energy?

Even time is ours, Dr. Payot shows, if only we master the secret of its control. Most people think they know how and when to work but they will be surprized to learn from him not how little they know of this important matter but how much they know that is erroneous. Perforce all efforts based on such error must be a misapplication or a waste of energy.

Most people are rarely brought to a realization of the fact that they suffer from a

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marked deficiency in the power of attention. Control of the power of attention, we shall find, marks the dividing line between the normal and the abnormal mind; and differentiates the mind that sees clearly and quickly from the mind that conceives only blurred impressions of facts and ideas.

Most people are blissfully unaware that at least half the time they give to reading is misspent either because they read what they need not or should not read, or because they read the right books wrongly. We shall find what treasures of time we can save both by a proper selection of books, magazines and newspapers and by a systematic procedure in reading them.

Most people are content to confess that they have good memory for some things and no memory at all for others. We shall be amazed to discover that we may all have the dependable memory we need, if only we resolve to acquire it scientifically.

Most people have pardonable pride in their ability to utter an irrevocable "Yes" or "No," and so feel assured of their will-power. We shall be surprized to ascertain that will-power is a strangely uncertain in-

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strument, which works against as well as for our advantage and, on occasion, does not operate at all.

All who honestly examine their mind and methods of procedure will be willing to concede that the statements just set down may be applied to them; and it is for them that this book was written.

But they must not expect to find in these pages a quack prescription for an alchemy that will change base metal into gold. They must be prepared to mine the precious metal of their intelligence through careful and persevering effort.

This implies hard work; and, as has been suggested, most of us feel we have more than sufficient of that as things are. But that is because we have not come to realize the difference between drudgery or hustling, and sane, regular toil in which our soul is quietly exultant because through it we attain to freedom and power.

We say we have no time for any attempts at exceptional achievement. We were born to be dull plodders. Yet it will be shown how such celebrated men as Charles Darwin and Herbert Spencer, among others, were

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able to accomplish in brief but regular intervals the monumental achievements which have made their work an immortal influence. Darwin, for instance, and Spencer worked such a limited number of hours on their particular investigations and studies, because each suffered from insufficient health, that it seems incredible their total production should bulk so large. Carlyle held that no man of letters has ever given more than one-fifth of his time and attention to literature; and he believed that with four hours daily, of serious concentrated effort on intellectual tasks, one might attain to results far beyond the highest expectations.

We shall read of other famous philosophers and scientists, authors and artists, whose estimate of the number of hours daily required for intellectual work, runs from three to six. At the same time, the caution is issued against the two great enemies of the active mind, which are overwork and worry.

Dr. Payot makes particular allusion to the tendency among Americans to indulge their ambition for work until it becomes a monomania, and positively deleterious to their

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health. In his view there is no excuse for working oneself to death when through work itself one may healthily and tranquilly advance to contented age.

Naturally as each one of us is differently constituted, the capacity of each for work is different. It behooves us, therefore, to learn the extent of our capacity, and when it is of greater or less potency. The varieties of occupation also have weight in determining the limits of our energy. Some work makes a heavier drain on our brain forces than others; and certain kinds of work are more fitly performed at certain times than at others.

The two chief elements in organizing our minds for systematic exercise and development of our intelligence are the power of the attention and the power of memory. Cultivation of the attention is a subject on which there has been too little real knowledge available, that is, knowledge which results from experimentation and tests. Such information is provided by the present authority, who is wise enough to have us train our minds through will and feeling, so that our attention may be withheld as well

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as given. Withholding the attention from idle, useless, or unnecessary matters means the conservation of just so much nerve force for profitable expenditure.

Similarly in the case of memory, Dr. Payot solicitously advises us on the importance of being able to forget voluntarily as well as to remember voluntarily, so that we may assert full dominion over our powers of recollection. He shows us clearly the difference between good memories and poor ones, for in the latter everything is piled up in an indistinguishable mass, so that none of the material gathered is available when needed, and eventually becomes so much junk. In the other, all recollections are kept in order so that they form an organized structure, and constitute the actual intellectual capital of their possessor.

Many books there are for the instruction of the uneducated; but few for those who are either partly educated or over-educated. The over-educated are those whose minds have been crammed with information that has never been digested and assimilated; the partly educated, those who put behind them all idea of reading for anything but pastime,

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once they have got beyond the confines of school or of college. They pride themselves on the fact that they can get all the information they need by reading the headlines in the newspapers.

In earlier days progress in the world was slow and painful because there was so much ignorance in all countries. Nowadays, as humanity strains and tugs feverishly to advance, it finds its chief obstacle to be the friction and hindrance caused in the general mind of the world because the great majority are partly educated or are over-educated.

To supplement the education that is lacking, and to render assimilable the education that causes chronic mental indigestion, is the purpose of this book. It is designed to achieve that purpose, not through any mysterious and occult procedure, but through forthright expression of ideas, which he who reads may understand as he reads, and be guided to the knowledge that ensures broadening and deepening of the mind as well as invigoration of the soul.

RICHARD DUFFY.

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PREFACE

"Give me a point of leverage," said Leibnitz, "and I will lift the world."

He understood the mechanism of leverage which, translated into terms of thought, means the concentration of the forces of one's intelligence upon the solution of a problem.

A mighty pile-driver is only a perfect hammer; and the most powerful steam engine is only a combination of levers that operates through elementary laws of mechanics. The machines of modern industry which afford us prodigious control in the material world are only higher developments of the simplest tools. But these simplest tools are based on a system of construction.

The clear-sighted genius of the Greeks divined that the supreme necessity in any effort is to proceed straight ahead without allowing any diversion of attention. By concentrating attention on the problem to be solved, one arrives at the right road of solution. Thus it happens that a mind of sharper

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penetration than the ordinary is able to set aside great obstacles through the system of leverage. Doubtless Leibnitz had observed children employ this system or method at play. Was it not young Potter who, in playing billiards, discovered the eccentric which permits the distribution of steam alternatively at the two ends of a piston? Watt, who surprized him at this discovery was immediately imprest with its material value.

Now these basic methods or systems of machinery which increase its force a hundredfold exist also in brain-work. They add to the efficiency of the mind as the lever adds to the strength of our muscles and the telescope to the reach of our vision. Nevertheless, the discovery of such methods in physical effort has been much easier than in mental effort—and for two reasons.

The first is that the problems which confront inventors are limited, precise and circumscribed. Attention is fixt on a design, a project of material construction. If miscalculations are made or if the inescapable laws of nature are violated the penalty is immediate and the correction of the error inevitable. If I misjudge the amount of pressure

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a certain piece of machinery will stand, it breaks.

On the contrary, however, in the field of mental effort errors of judgment are not so obvious as are errors in material things and their consequences appear only after a period of time. To some workers in the intellectual field they never become known.

Nevertheless, it is easy to be led astray by a confusion of material things that are in the least complicated. It is difficult to draw back in order to get a good look at things, to see objectively with a fresh eye and criticize what we see. Herbert Spencer considered in turn each of the familiar things of which he made use from the moment he got up in the morning; and he noted that not one of them but could be greatly improved by a little reflection on the part of the persons who made them. Taylor has recently proved through attentive study of the movements of working men in their simplest duties—loading a wagon or laying bricks, for instance—that there might be a saving of three-fourths of the energy they expend. Consider the mental obtuseness that prevails in the rough method of unloading baggage when a big

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express train arrives in Paris. Eliminate the loss of time repeated each day with the arrival of each train, the waste of energy, the ill-humor of everybody concerned and one realizes the evils that result when intelligence is not applied in any matter. Nothing is so rare as the application of real intelligence to the matter in hand. Nothing is so rare as the objective, reflective attitude of a mind that studies things free from the routine of habit and with new and ingenuous observation. Nothing is so rare as a mind, poised as a true and sensitive pair of scales, which can note imponderable weights and is not unbalanced by inhibitions or habits. If it is difficult to amend routine practise in material things where the evidence of error is palpable, how much more difficult the problem in matters intellectual in which consequences are so baffling! . . .

A great obstacle to clear-sightedness in intellectual processes has been the complete absence of the scientific spirit in psychology until recent years. The essential idea that in psychology there are laws as sure and inevitable in effect as in mechanics has not, until now, penetrated the minds of educators. The

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result has been that mere routine has prevailed because there was no coherent body of observations and experiments in the field of mental effort.

"A Fijian Chieftain was climbing a mountain path one day, escorted by a long file of his male followers. He stumbled in the path and fell to the ground. At once all his men fell excepting one. Him they attacked fiercely and desired to know whether he esteemed himself superior to his chieftain." [1]

Let us not laugh at this, for we are very much like the Fiji Islanders, in that each of us does the thing he sees done and does it in the same way.

I myself have suffered from mistakes of method. Overburdened with a mass of diverse information exacted in my studies, I had no means of learning for myself a personal method of work. Our professors never took us into their confidence about their methods; they seemed even to feel a repugnance against revealing their processes of investigation. Was this a survival of the prejudice that esteems work demeaning? Or did they choose to have us believe that their suc-

[1] W. Bagehot: "Scientific Laws of the Development of Nations."

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cess was due to a natural facility that made work as easy as play?

On the other hand, such is the contradictoriness of human nature, when they did speak of the work they performed, they exaggerated it to such a degree of absurdity that they seemed possest of superhuman energy and we were discouraged. So also Flaubert used to boast that he worked eighteen hours a day. And how often have I not heard so-called "intellectuals" say modestly: "I work fifteen hours a day." To such as these the thing to reply is: "Let me see the work you do."

During my studies no one called my attention to certain truths that I discovered for myself—and fortunately before it was too late. I never suspected that there is such a thing as technical perfection in work and that through intelligent adaptation of energy to the laws of memory one obtains attention. The art of learning is the art of knowing how to obey the laws of the mind and of the body.

But this obedience to inescapable laws means the destruction of our indolence, our vanity and our craving for lawless activity. We all have the foolish hope that in our case

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these laws will not operate. So we prefer to let matters go their own way and our intellectual development is a chance adventure. We live under the régime of Chance. Our ideas form associations each according to its own attraction, as fancy wills. Such an intellectual life is only a somewhat coherent reverie and is agreeable because it is dominated by the element of the unforeseen. So the days of a tourist are interesting because of the variety of sights he beholds and because of the unexpected incidents of his journey such as meetings with new people, storms, strange and uncomfortable hotels, etc. Now in our travels in learning toward the goal of a degree we have learned to live as tourists under the régime of Chance. It appeals to our unstable nature and to our dislike for the exercise of will-power, and we like it. It is a natural régime.

Most people are happy thus and their life's harvest falls far short of what it should yield. Foreigners unite in judging our French young men as intelligent, serious and industrious. They are curious, easily stirred, enthusiastic—but they are tourists travelling in the domain of Chance. They

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are buoyed up by presentiments of great deeds which they will never realize. They feel the boiling energy of youth in their veins and, puffed up with assurance, dream of works that no one, alas, will ever read because they remain in the realm of good intentions.

Victims of this uncontrolled energy, they waste and scatter their forces. I could cite many such cases of gifted and spirited men, whom I would liken to vigorous plants of brilliant foliage which never bear fruit.

Shortly after the publication of "The Education of the Will," I was visiting a distinguished professor, a man of profound love of learning and also a great worker. He confest to me rather bitterly that I was responsible for a cruel shock he had suffered. Suddenly, but too late, he learned in reading my book how much he had lost in life through scattered effort. He was about sixty years of age and he told me further that the sense of this irreparable loss was torture to him and he could see no ray of hope to soften the anguish he suffered from having been the victim of erroneous methods.

For the very reason that I myself came so

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near dissipating my energies in scattered effort, I now consider it my duty to advise those who come after me. At this time when our country is sadly impoverished in manpower it has need of every ounce of energy. Our students to-day realize that they owe everything to their country. The sacrifices of the present generation are beyond the power of words to express. Why have a million men been lost in the war if not to enable the young to carry on intact the patrimony of ideas and sentiments that makes France a radiant hearth in the world? They owe a reckoning of their intelligence and their energy to their country. It is their capital that must be made to bear rich fruitage. But all capital can be dissipated if it is not intelligently controlled.

Even if our capital of intellectual energy is limited it can be highly productive if our method of work is correct; that is if in striving for our objectives we follow the laws that govern health and those that govern the memory and the attention.

Not only are our forces limited, but life itself is short. We must therefore play the game hard with destiny. If as unskilled

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players we would avoid defeat at the start, we must learn the rules of the game and think well before we play. But if we play the game well we shall find that we have a fair partner to play with. He is pitiless only to those who refuse to learn the rules of the game; toward the others he is generous and considerate.

In other words, the true method of work, once we understand its laws, will be found to have nothing cramping or enslaving in it. Nay, even somewhat of the chance character of touring is not inconsistent with its character. There is no restriction against gazing upon the country as we go along, of refreshing ourselves at a wayside spring or stopping to gather flowers. But even in the midst of such distractions we must keep in mind that at the end of each day a certain point in our journey is to be reached; and this involves steady walking and a correct knowledge of the direction to be followed.

Consequently, a certain apprenticeship is necessary. One must know one's trade. Whether we wish to plane a board, file a piece of iron, saw wood or put in a pane of glass, a number of indispensable facts

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must be learned in order properly to employ our strength in accordance with the laws governing these performances so that the work will be done well. If an experienced workman does not give us the benefit of his experience and correct our mistakes we shall at much expenditure of effort do only poor work until we discover the right way to do the thing. But this is a waste of time and energy. We can not pretend to learn by ourselves all the various steps in any one process that have been gradually accumulated by generations of observers. We shall not evolve out of our own minds the process of soldering lead pipe any more than we can discover in our own consciousness innumerable facts that an apprentice acquires from his master. We should learn everything, even to the correct manner of boiling an egg.

Now when we come to the most difficult and most delicate of all fields of human effort, which is the work of the brain, it would seem that only the vaguest kind of instruction and guidance is necessary.

Did I say vague? In most cases our instructors, who have never analyzed this important matter, give us counsel that is ab-

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surd because it tends toward scattering, rather than concentrating effort. "One must read a great deal!" professors urge in a kind of rivalry of emphasis, whereas in truth one should read little and only books of the highest value. My experience empowers me to state that there is not one student in a hundred who has the slightest idea of a method in work which is suited to his kind of energy, his kind of memory and his physical condition.

No one has ever taught him to consider this question of such vital personal import. I often come across students who do not understand how to consult a dictionary or a grammar for the simple reason that no one has ever taught them how. When a task is set for them they do not know how to set about it. Besides every decision, every choice is a matter of superhuman effort for their feeble wills. Nobody shows them how to "attack" a task; and in this most difficult of all apprenticeships, the result is that we have a host of rudderless, despairing young people who only too often sink into a morbid resignation of discouragement.

As a professor of philosophy I had the

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happy inspiration once to sit with my class in their study hour, and I made a startling discovery. After three months of classes there were some students who did not really understand what my course was all about. It was a happy discovery for me because from that day forth I watched more and more anxiously the results of my instruction, which I simplified in method year by year.

Many instructors never seriously inquire into the reactions of their scholars to methods of instruction. In my work, "Apprenticeship to the Art of Writing," I explain how some courses are so overladen with a variety of matters that absolutely nothing remains in the mind of the learner.

I hope that in the present century we shall have in every institution of learning a man with a taste for education who is well grounded in psychology and who will have as his particular function the control and operation of methods of work. He would be a director of work capable of giving each scholar the special advice and counsel needed in accordance with the scholar's personal equipment. He would teach scholars how to learn their lessons, how to use the dictionary,

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the grammar, how to go about translation, composition, how to take notes and how to classify them.

He would keep the morale of his scholars at a high level by making them familiar with the lives of great men and instruct them also on the great power that resides in a wealth of minor cumulative efforts.

To the discouraged scholar he would give close observation, study the causes of his lack of energy and apply the proper remedy. He would ascertain the failings and the aptitudes of each scholar, his habits of mind, his weak points and his inclinations and give to each and all of these young people the help they require.

Gradually this director of work would garner the fruits of continued intelligent effort, the accumulation of professional experience and capacity, and he would evolve from them methods of work adapted to all kinds of persons. He would so contrive his course of action that the effort of the best and most intelligent workers would not die with them. Thus he would end the criminal waste of experimentation in education as a result of which

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each of us at the outset of his career is as bereft of the sustaining wisdom of our elders, which died with them for lack of means of conservation, as tho we were born on a desert isle.

Many fine minds have been ruined through lack of a well-organized system of apprenticeship in brain work. Many discouraged scholars in a bitter mood of helplessness have slipt into mediocre and cheap ways of thinking and living.

I myself have the painful conviction that if I had known how to work I would have avoided enormous losses of time, an insensate waste of energy and tragic moments of discouragement. What is more I would have achieved results more quickly, with greater ease and with less fatigue, and my life would have been happier and healthier.

On our young people rests the responsibility of the reconstruction of France in the splendor we desire. It is in order that they may be more content in their work, and find it easier and more fruitful, it is to save them from wasting their energy, that we offer this manual of intellectual apprenticeship. As

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we ourselves have obtained a minimum of result through a maximum of effort, they may, providing they adapt this book to their personal case, attain through a minimum of effort a maximum of result.

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BOOK I

ATTRACTIONS AND METHODS OF WORK

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I

LOVE OF WORK THE CONDITION OF ALL PROGRESS

Our system of education, the offspring of empirical traditions, is based on serious psychological errors. It seems to ignore the fact that the roots of the mind reach down to the emotions of the soul and that the will is a force of feeling. It would seem natural to start out with the cultivation of feeling and its intelligent organization. Through an adroit education of feeling prodigious results may be attained. One may thus hold in check certain powerful tendencies of a character or, on the other hand, add impetus and vigor to somewhat feeble inclinations.

The founders of our national system of education, dazzled by the developments of science and misled by excessive admiration for Teutonic erudition, confounded the accumulation of knowledge gathered from outside with the education of the mind. Too stren-

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uous to secrete in memory an encyclopedia of superficial knowledge, they overlooked the more real education of the soul. Thus they deprived themselves of the cooperation of feeling and the most efficacious and most noble forces of human nature.

THE APPEAL TO FEAR

Our teaching system does not cast aside all emotional appeal for thus it would be doomed to failure. Yet through a heedlessness, the more regrettable because the French are so responsive to generous sentiment, it makes appeal only to certain sordid emotions such as fear and envy. These emotions are powerful and universal but their effect is limited to the moment.

The fear of punishment may act as a curb, but it is never soothing or stimulating. Its only effect is to repress a bad habit or a vicious tendency. Thus it is that the fear of a beating gradually so closely entwines itself with the picture of a forbidden act that one can train a hunting dog not to eat the game that is shot. But even then it is wiser not to trust too much to this expedient. Through fear, also, a child may be taught not to play

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truant; but one can not count on leading the child to serious and earnest effort by this method. The child will yield only the minimum of effort under constraint, namely the outward air of effort and a hypocritical good will. The scholar who is bored by his studies is very ingenious at saving himself from toil. He seems to be attentive, but his attention is niggardly and he shows just enough energy to deceive his teacher. He is not in earnest about his work and does not rouse all his forces to meet its difficulties.

This lack-loyal attitude is characteristic of most of our students. They know how to simulate attention to their work while they are actually engaged in their own line of thought. Through sheer lassitude teachers become resigned to the appearance of attention. There is a joint conspiracy of effort to escape effort. In my investigations I have found that the students under punishment for failure of studious duty are always the same band. How could it be otherwise? These penalized scholars are suffering from infirmity of will-power. To shut them up for two hours and force them to some task, where simulation still triumphs, is as judicious a

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remedy for their condition as to make a child copy the conjugation of a verb in order to cure it of the grippe. A malady of the will, tho it does not cause an alarming rise of temperature is none the less a disease. Its symptoms must be studied, its cause diagnosed and the specific remedial measures must be employed. Instead of punishment these scholars should have treatment. The fear of punishment will never cure a weak will.

THE APPEAL TO EMULATION

To earnest and energetic students our superannuated pedagogy offers emulation as a stimulus of will-power. Yet it must be obvious to all careful observers that this stimulus incurs the risk of two kinds of false sentiment. Among the few scholars who are keen to be at the top it excites pride and vanity; and among the others, envy. The right sort of emulation is born in one's own conscience. If to-day I am more courageous and stedfast than I was yesterday, I feel I have improved, and this feeling is one of the purest and profoundest pleasures of human nature. It is a legitimate joy. But to compare one-

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self to one's fellows is deplorable. Even if we were able to judge ourselves fairly, how large a part does not chance play in success?

Moreover we see ourselves and we see our fellows only as it were through a slit in the door. We are stronger than this or that one in this or that line of study, but we take no account of their superiority in character and courage. Vanity is a weed of such active natural fertility that there is no need to cultivate it artificially. It grows famously of itself; and young people are only too prone to exaggerate their own merits and depreciate the qualities of their fellows.

It is a mistake to accustom a child to act only through vanity. Grown up and as a student, at work alone in his room, this stimulus is no longer operative. He is droopy and becomes one of the many melancholy youths who are unable to find within themselves the spirit of work.

Therefore, it is imprudent to habituate the will to artificial stimulation so that it is roused into action only through the driving-power of a will beyond itself. There are only too many automatons who wholly lack pri-

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mal force and can be set in action only by some outside agency.

It may be that the appeal to vanity, which begins with childhood, is due to the narrowness of life in the smaller centers. Unaccustomed to seek in the depths of his own mind his reasons for action the young man looks for them outside himself. Is it surprizing then that later he submits servilely to the despotism that the opinion of his little world imposes on his personality? Such opinion is indulgent to mean defects, but pitiless toward independent spirits. It classes initiative and non-conformity with crimes. So it will always be as long as educational methods cultivate the strong but sordid passion of vanity.

It is the more deplorable to have recourse to vanity because the influence of emulation is so restricted. It prevails only on the foremost members of a class. As it is the mainspring of present teaching methods, the result is that those who are not among the foremost members are, as it were, abandoned. Nothing remains to serve as a stimulus to them except the fear of punishment; and we have shown how ineffective is the method by

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punishment. There is also, however, the stimulus of pleasure or satisfaction to be gained.

THE BRIBE OF REWARD

The hope of pleasure to be gained as a stimulus is as valueless as the menace of punishment. To promise a youth some agreeable reward for the performance of a task is a low-grade method of education. He may spur himself to effort but one may rest assured the effort will be more apparent than real. Here again we find, as in the case of the menace of punishment, the youth's cleverness at pretense. When he is only pretending to study it is a waste of time to discuss his good faith. A lazy pupil, who is forced to study, will seek energetically to escape the effort; and his teacher at length is wearied and contents himself with the pupil's pretended diligence. But what the teacher ought to do is to win over the personal intimate will of the pupil to studiousness.

Moreover, to promise a pupil a reward for studying is to demoralize him. It means the admission that work is an annoying burden, but that to work now is the only means to

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escape work in the future. This attitude of mind is characteristic of the great multitude of mediocrities in colleges who manage to attain a degree in medicine or in law through a very inferior course of effort and afterward make no intellectual effort at all. Indeed, how many professors there are also who having once attained to a post in the faculty cease to toil and strive. The error of promising a reward of something agreeable or pleasurable is due to ignorance of psychology. Our educational system sets out from a doctrine of the nature of pleasure that is radically false, and one which has been devised by sedentary and neurasthenic savants. In their idea pleasure can come to us only from outside oneself. Their enfeebled constitutions prevent them from understanding the real nature of pleasure.

TRUE NATURE OF PLEASURE

To a man of sound health, pleasure and pain are merely the consciousness of assets and liabilities in his forces. Pain exists only when there is an exhaustion of the energy required by his vital functions. Thus the fresh morning air, which is so agreeable to

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a man in health, may be distressing to a sick person.

Pleasure might be denominated as the song of triumph of the human organism. It indicates the proper working of a machine under high pressure. It is the consciousness of a superabundance of energy; and, as Descartes says, the feeling of something perfect. When the organism produces more power than it consumes there is fulness. The nervous system is vigorous. One feels full of ardor, energy, gaiety. One breathes deeply and the heart beats lightly. The experiments of Claude Bernard prove that joy increases the production of the gastric juices. One's movements are energetic, lively and one smiles easily. The association of ideas is quick and copious.

Aristotle, who was not a recluse, as are some modern philosophers, and who led the life of outdoors, saw clearly the nature of pleasure. Pleasure is a superaddition to action and each action has its own pleasure, which intensifies such action.

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THE PROFOUND PLEASURE OF ENERGY

If we wish to see a person enjoy real pleasure, we must know that only he himself can realize it and that must be done through action. The highest and most satisfying pleasure is the pleasure of activity. Until we have dug down within ourselves and discovered the intimate joy of energy in action we have accomplished nothing.

How often we hear people rail at the folly of mountain climbing when a climbing accident happens in the Alps. Their arguments against climbing will show you plainly that city dwellers of atrophied muscles and products of our educational system, so much confined to mental effort alone, are completely shut off from the intense pleasure of energy in action. To be sure, the majority of tourists indulge in mountain climbing out of a vain wish to be able to relate their exploits. Such as these will always be, as Daudet's *Tartarin* was, mountain climbers for the comic papers.

In the rough ascent of a mountain at the chilling hour of dawn the mountaineer experiences an austere, stoical but profound joy

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—that of feeling he is master of himself. A consciousness of strength, the most intense of emotions, rises within him as he quietly meets and overcomes the first strain on his muscles. Soon the rhythm of respiration and heart beats begins and he is conscious of a physical exaltation, a flow of health, vigor and elasticity. On this physical basis arise impressions of splendor suggested by the vast horizons and sublime precipices all about him. A mighty wave of enthusiasm bathes his soul, which retains its new increment of vigor for weeks, just as a bell continues to vibrate long after the final stroke of its clapper.

A similar pleasure results from intellectual effort in its highest exercise. He who works with a reward in view or mere success in an examination has not the slightest conception of this interior happiness. But he, who, as the mountain climber, employs all necessary effort and defies the resistance of the unwilling flesh and the dispersive mind, is soon repaid for his courage by a profound lightness of spirit and a sense of power.

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THE NORMAL STIMULANT OF THE WILL

Conscientious effort in healthy natures produces a stimulus that results from the perfect functioning of the intellectual faculties. The student of feeble will never enjoys the sensation of accomplished effort by humoring himself. To enjoy this sensation one must deserve it by undertaking a task with confidence and surmounting boldly all obstacles that present themselves. The true stimulant of the will is energetic effort.

The desire for action comes from a source deeper than we ourselves. Life needs to spend itself and this need proves greater in proportion to the quality and quantity of one's energy. Inaction is the worst of ills. Consider for a moment a healthy child. In play he expends a prodigious amount of energy in a single day, because action is a necessity for him as a means of happiness. So also when a student learns through his own experience the enthusiasm of fully exercised thought he will have no further need of artificial stimulation. But it is necessary that the studies we recommend to him continue along the line of his natural tendencies

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to action. To realize this aim attention must be paid to the needs, desires, inclinations and natural endowment of the student, so that his tasks be suitable to his latent energies and calculated to expand them.

One, for example, will acquire a taste for geometry, if he is made to understand that by means of geometry he can fabricate some object he craves, measure the cubic air of his room, the area of the garden, the contents of a pool, the height of a tree, of a house, of a hill and, later, with equal ease, the distance of a planet.

Similarly a young woman will acquire a lively interest in physics when she realizes that she is operating physical laws in so many acts of her daily life. If she turns on a faucet to fill a pitcher with water, she puts the law of communicating receptacles in motion. It will be recalled also that when the famous French physicist Papin noticed that the steam from a sauce-pan on the fire repeatedly lifted its lid he was seized with the notion that here a certain force was to be captured. Yet I have seen professors scandalized that one should degrade their science

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with every-day matters, which it should really ennoble.

When a pupil understands that in order to express his thoughts he must first learn the logical construction of a phrase, a sentence and a paragraph, then he will devote himself whole-heartedly to acquire a personal method of expression.

It is apparent therefore the pupil must understand that the work required of him is the means by which his youthful energy can compass the achievements to which he aspires. But the satisfying of his inclinations through effort must ensue from personal experience and direct impression.

It is possible to teach a youth to analyze the thoughts that pass in his mind. It is necessary to do this so that he discern his interior happiness and amplify it by the care he bestows on it. Every sensation becomes more clearly defined and gains force once it is kept in the light of attention.

Later we shall pause to consider what occurs in the semi-obscurity of consciousness, for many students, through distraction, are the victims of deceptive suggestions which they accept as genuine. Does it seem un-

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likely that we should distrust our own consciousness? Then it must be remembered that all manner of suggestions seek to coil about and control the attention.

There is one main sensation that becomes oppressive if we palter with it and this is the sensation of fatigue, a tempting and dangerous sensation. We must turn aside from it when it presents itself. If one delays to parley, one yields to it and ceases to work.

How often in the course of an arduous tramp we are confronted with its imperious demand. Yet if we thrust it aside we are amazed to discover the reserve forces within ourselves. This sensation of fatigue is very subtle and cries to us that the last ounce of strength is exhausted. But it is fallacious and the proof of the fact is that if we refuse to be persuaded we are astonished at the reserve forces which it had been dissembling.

The same principle holds true in brain-work. How little we do in comparison to what we are capable of doing. But this insidious suggestion of fatigue creeps into our consciousness and as we seek only a plaus-

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ible excuse to stop working we yield and it gradually becomes master of us.

On the other hand we shall see that if we obstinately refuse to entertain the suggestion of fatigue gradually we shall discover in ourselves rich and richer stores of energy.

Just as in certain soil, artesian wells must be sunk very deep to set water flowing, so we should occasionally dig deep below the heavy suggestions of fatigue to set free the real springs of energy. Then they bound upward. It is upon these hidden sources of energy that a delicate young woman draws in order to dance the night long without fatigue and without exhausting effort. It is through these hidden sources of energy, also, that persons of enfeebled will-power and incapable of decision are able under the stress of great emotion to perform some act of heroism that surprizes them.

But sudden emotions which set in motion the deeper sources of energy are transitory in their influence. The weak-willed person soon relapses into his original state overcome with fallacious sensations of powerlessness.

It is important also that we decide always

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to probe ourselves deeply enough to tap the living source of energy. We must not rely upon transitory emotions nor on artificial stimulus. We must realize that the one and only lasting stimulant is the will. It is through bad habits that we fail properly to command our energies. In moments of full vigor we should fix the standard of our energies; and when it is thus recorded, we should never admit that they can sink too far below this high level, and under no circumstances that they can fall to zero. Frequently we do very good work when we start out with a feeling of fatigue. There is only one way of ascertaining whether this feeling is false or real and that is by action. Action alone is the true test of our actual capacity.

When we set about any work, we must do so with the conviction that we shall succeed. We must not for an instant admit the possibility of a set-back, but plunge into the work with ardor and devotion. Then we shall never again permit a false sensation of fatigue to bring in its train, with our own more or less hypocritical complicity, a whole coalition of "defeatist" ideas and feelings. Such a coalition can never take form if on begin-

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ning our work we face obstacles with decision and confidence.

It is to be noted, furthermore, that it is rarely while we are working that effort is painful to us. This happens either before or after the actual effort is exercised. It happens after because it is possible we are really tired. It happens before because of the action of getting under way which implies concentration of thought on what we are about to do. It is this preliminary exercise of attention that is difficult. But once we have actually got to work we are absorbed in it.

The fact is that work is a fierce struggle, as every struggle is fierce, and it demands courage. Proudhon compares work to war, which may be true enough of dangerous occupations where one is constantly in the shadow of death, but it is not true of intellectual work. In any case, setting peril aside, actual warfare is made up of enduring patience and stoic indifference to sufferings, privations and setbacks. And these latter are the very virtues of the conscientious brain-worker. Solitude and silence are his lot, and also he maintains a steady contempt for the protests of his physical being and a determined

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resistance to the innumerable tendencies and association of ideas that intrude to divert his attention. We may add further that for many young scholars there is the added burden of poverty and a minimum of comfort.

Then as soon as our superiority reveals itself there comes the ill-will and jealousy of our fellows, and what is worst of all, sometimes the jealousy and ill-will of a leader who serves one badly. But just when difficulties and injustices assail us, we take account of our strength and bravely keep right on with our work. "To those in whom I am interested," Nietzsche wrote, "I wish suffering, isolation, sickness, unfair treatment at the hands of others, and opprobrium. I wish that they may experience profound self-contempt, the torture of self-defiance, the stress of defeat. I have no pity for them, because what I wish them is the sole test to show whether they have or have not real worth. Let them hold fast!"

Christopher Columbus

In our moments of discouragement it is salutary for us to have a comforting companion. Let us recall for instance Christo-

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pher Columbus, lost on an unknown sea, the victim of storms and of bad food. He had to fight not only against the fears and superstitions of his crews, and against the secret disloyalty of his subalterns, but what is more, no doubt in sleepless nights he had to contend with his own doubts and the suggestions of cowardice, which in moments of crisis will reveal themselves in the most finely tempered souls.

But the fine edge of his will did not turn into weakness. Once for all he decided that he would see it through, and amidst the fury of the tempest, the mutiny of his men and his inward doubts, he remained firm and unconquered. He knew that persevering faith triumphs over obstacles and that it uses them as a lever.

Christopher Columbus is the perfect model of human energy because all moral and material obstacles confronted him simultaneously. All men who have accomplished anything have confronted inward obstacles, such as indolence, doubt, which should be overcome at the outset, and then other obstacles either material or social. Moral grandeur consists in triumphing over all such advers-

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ity. Who does not understand now that idleness is only cowardice and worthlessness.

MORAL WRETCHEDNESS OF THE IDLE

The idle person is a deserter. A parasite on the toil of others, he leads a stagnant life, void of value, of dignity, of happiness. Even in college the idle person enjoys no satisfaction. His career of dissimulation passes in a tricky and demeaning struggle to achieve an appearance of effort just sufficient to save him from punishment.

On leaving college he becomes the incompetent student, a fixture in lounging places who drags himself through days of boredom at an age when the energetic toiler lives in the enthusiasms of newly discovered horizons. Later, perhaps, he becomes an incompetent physician, reduced to the shift of charlatan practise for lack of competency and knowledge.

One meets idlers also in law schools, their minds all a-fog about law and legal procedure, who become poor lawyers and who are reduced like incompetent doctors to charlatan devices.

On all sides idlers are found among the

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failures, the embittered and the envious and all those who, on meeting an acquaintance successful through hard work, greet him with the traditional remark: "You're a lucky chap!"

Idlers form a growing population for whom work is an insupportable burden, as it really is, if one has not discovered the meaning of work, its fruitfulness, and its joys, the most intimate, most profound and most lasting of any in this life of ours.

A choice is offered you at your entrance into this life. Either you accept the law of work—or you aline yourself with the refuse of humanity, made up of parasites, of the indolent, of all who exploit the credulity and vices of human nature. . . . These social parasites are of the same breed as cowards. They dread persevering effort. "Idleness," says Bayle, "angers heaven, which has no mercy for those who will not work."

It is necessary, however, to remark that idleness is not an absolute quality, but exists in degrees. Thus no one is so wholly lazy as to permit himself to die of hunger. It follows, therefore, that there is in the idle person a germ of will-power that can be developed.

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But idle persons allow it to dry up and perish because the fear of effort, which could easily be banished, tries to justify itself through the intelligence with the result that all attempt at reconstruction is blighted.

In my previous work, "The Education of the Will," there is an account of the sophisms of the idle, of their counterfeit arguments that almost have legal currency. Among these are the following: "One can't be made over again," and, "It's impossible to do anything in a small town."

To resign oneself to the part of doing nothing is after all a stupid decision, because no one can escape at least a minimum of activity. What is more, the idler suffers innumerable small tortures of effort that the man of energy never is conscious of, because the idler has let his standard of mental accomplishment fall so low that the least effort is a labor to him. A social call to be paid, an evening in society, a tactful letter to be written, a minor errand, are towering responsibilities to a person of enfeebled will. This shows how true is the saying that Satan employs all his ingenuity to turn everything into drudgery for those that will not toil.

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WITHOUT WORK NO SPIRITUAL HEALTH

We have said that as the result of climbing in the Alps there remains an increase of vigor and a lasting strengthening of will-power. Similarly energetic brain-work has a tonic effect. He who really exerts himself becomes more and more master of his attention, more decisive, more resolute, more persevering.

This is a great gain, but it is not the only one. The worthiness thus achieved is rich in happiness. Public esteem nearly always swings its recompense to the competent person. An expert physician, a lawyer of bright mind, an able professor, an official who sees things as they actually are and is not overborne by precedent, are finally carried farther onward by public support. It is true that this reward may not fall to those earnest toilers who die young and whose life is usually embittered by the hatred of the envious. But if one lives, one is almost certain to triumph over envy, which declines for lack of courage. In any case it is better for those of genuine worth not to count upon the rewards of the world. As a usual thing these

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rewards go to mediocre people who alarm nobody. One must be of mediocre ability not to have in advance sure reward in increased power and its resultant confidence, which lifts one above the fickleness of fortune. The rewards of the world are only by-products of work.

JOYS OF DISCOVERY

Coupled wth the feeling of increased power are the intense joys of discovery. The real worker may be compared to the Alpine mountain climber who scales a difficult height to find himself facing a vast new horizon. The brain-worker experiences this same sensation after toilful effort, when he discovers a mass of confused facts suddenly falling into an order that illuminates his mind. The chaos of contradictory ideas that seemed crude as the patches of color in a painting seen at too close range, suddenly disclose themselves in simple and harmonious accord. Thereafter he sees these facts fit themselves smoothly into his theory, which little by little becomes more firmly rooted and grows as a mighty oak.

I have experienced such joys of discovery

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which give a new tone to life. I recall with what emotion I suddenly became aware of the absurdity of the theory of free-will as it was being taught to us. That day at the bedside of a patient at Saint Anne's hospital, I grasped the meaning of "inability to will" and saw that the will is only a word. Back of this word lies a host of confused sensations, tendencies, emotions and ideas which strive to assert themselves and consequently to gain control of the power that commands the three hundred and sixty-eight executives which are our muscles. The inability to will among our patients, I noted, proceeded either from an incapacity of emotion or an excess of emotion suddenly thrown into action. From that moment I realized that we could win our freedom by far-sighted strategy and adroit tactics. For thirteen years I allowed this discovery to mature and it eventuated on one side in my volume "The Education of the Will" and on the other side in "Belief."

Many young people spoil their lives through the same causes that made miserable the patients of diseased will whom I studied at Saint Anne's—that is, through their inability to devote sufficient breadth and depth

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to worthy thoughts. They scatter their attention like crumbs.

This discovery permits me also to say with certainty, after twenty years of observation, that our system of education, because it makes the method of scattering the rule, is only a dissipation of energy and intelligence.

I made another discovery. For it is discovery to pursue an abstract law with all its wealth of consequences into the concrete and such a law is that of the accumulated effects of habit. Born in a village I was able to take precise cognizance of the results in certain families of a habit persisting through four generations—a century. Often I was fortunate enough to question people nearly one hundred years of age, who were good psychologists without knowing it. I came to understand that the only redoubtable combination of circumstances is that the *Incorruptible Accountant,* of whom we shall speak later at length, writes minute by minute in the brain our debits and our credits.

Struck by the state of moral abandonment in which lie those minds, more and more numerous, that no longer believe the affairs of this world are governed by a Providence, I

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wrote my "Course In Morals." I had no suspicion of the tumult to be raised by this little book, composed in utter good faith. For months I struggled amid the chaos of philosophic systems stored in my memory and several times I gave up the idea of further effort. But suddenly the truth revealed itself in the highest light common to the great philosophers and to superior religions. I saw that human life would be in no way above the life of the beasts of the field if it were not an effort toward a spirituality more and more pure. Through this it shares in the only absolute value which is reason. If one does not admit this truth it is impossible to formulate social order or the necessity of freedom of thought and word. Thought can develop only through peace and there is no sound peace except in justice. Only because of this higher attainment is human society superior to the society of bees, ants and beavers. One has but to study the fragility of the sociological bases of Durkheim to see what a materialistic conception of society leads to.

When, as in a lightning flash, we behold a whole mass of memorized disorganized ideas, opinions and facts adjust themselves sudden-

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ly in harmonious structure, the sense of oppression that has lain on our mind vanishes and gives place to a feeling of ease and delight. Out of chaos has come order and our feeling of ease and delight is the aftermath of a decisive victory. This tonic feeling of soundness and order does not disappear. For months the consequences of our discovery kindle new fire in it, and it may be said that the mind which attains reward for its labor in such a plenitude of satisfaction lives in an air of perpetual holiday.

To this highest of compensations work adds others that are more readily accessible.

WORK THE MEANS OF FREEDOM

After this terrible war we realize sadly that ancient slavery has not disappeared. It is modified into insidious forms, because a heavy servitude continues to weigh upon those who are not born rich. This servitude is often overpowering and the desire for independence or even mere dignity, which is in the heart of every man, is frequently pitilessly represt.

If, after long years of hard thrift, one has not gained independence, there is a means

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by which one may acquire its equivalent. This is by growing in value in one's calling so that one becomes indispensable, and everywhere there is manifested a reliance on one's capacities. Only through work can such a position of value be attained. It is imperative therefore that young people realize that independence is won only through work. But it is not only material independence that one gains through work. Ignorance is in itself a harsh form of slavery. Uncultivated minds find life confined and opprest because of lack of knowledge, of prejudices, of trammeled thought on every side. An energetic man escapes, as by winged flight, the fogs and vapors that smother the hollows of the valley. His refusal to accept things without examination enfranchises him. He recognizes no law for his thought except the laws of reason. He enters the company of the most noble and highest of human geniuses. He enjoys intimate friendly intercourse with the great poets and prose writers, with the philosophers and artists of all ages. His relations with them may well be envied by mere millionaires. For while these latter may have at their tables a Rodin, a Puvis de

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Chavannes, a Ravaisson, only the patient, toiling student achieves intimate acquaintance with the great, for time and perseverance are prerequisites of such acquaintance. Great men do not yield themselves except to those who meet them half way. This is why the talk of great men seems so banal to most people that come into contact with famous persons. The great stand aloof in spirit from the careless and the unknown mob.

Thus the hard-working student avoids the duplex prison of time and space—the time of the present and the environment. He shares in the liberating thought of men of genius of antiquity and of recent centuries and of all countries where thought is alive. He assimilates above all the intellectual substance of French men of genius, who are closest to our thoughts and our hearts.

Through work, then, one gains immense freedom, because one relieves the heart and the mind of what is low, narrow, trammeled, and confined. One mingles in the society of the best minds and the most chivalrous characters. What is more, one is enriched with the treasures of human art as one discovers the feeling and intelligence sufficiently broad

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to sympathetize at one and the same time with the Parthenon and with modern cathedrals, with Sophocles and with Corneille, with Le Poussin and with Corot and Puvis de Chavannes, with Berlioz and with Bizet and Debussy. What a stimulus to courage for young people who have a noble nature!

But it is not only from external oppression that work liberates us—it frees us also from bodily oppression. Consider for a moment how you learned to write. How toilsome it was to learn to draw lines up and down. And when your clumsy hand managed to make them not so badly, you tried to join them by curved lines. Little by little, after many tearful efforts, you learned to write letters of the alphabet. Finally, through the aid of habit that which had been difficult became easy and to-day your pen runs across a sheet of paper without any effort of your mind. Your mind has been cleared of this care. Your hand obeys your will automatically.

What an admirable extension of your will! So also to-day you walk without giving a thought to the act of walking and your feet seem of their own initiative to avoid stones

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and ruts. The violinist lets his fingers and his bow run across the strings of his instrument, and with his eyes fixt upon the music, he is in complete possession of the composition he is studying. In the same way, thanks to the freedom which labor has assured, when I write this chapter my thought is concentrated on the idea I am expounding, and I am not concerned either with the pen that moves swiftly across the sheets of paper or with words that gather from the depths of memory or with phrases that offer themselves as the natural mold of thought. Is it not wonderful that this assemblage of acts, each of which was painfully acquired in the past, leaves me full freedom of mind? Good habits are therefore productive of freedom in that they reduce to a state of obedience and silent control the physical powers of the body and the secondary forces of the intelligence in order finally to emancipate the superior energies of thought.

Moreover, only through work can we gain the essential freedom which is the freedom of the spirit. The natural state of every child—and how many grown persons remain children—is a chaotic anarchy of tendencies,

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inclinations, and passions. This disorder can be regulated only by and in work. For liberty of the spirit is never an act of decision that commands the numerous forces alive within us. That would be too good and too easy. This freedom presupposes a harmonious cooperation of our tendencies, our feelings, and our passions, and such harmonious and ordered action can be realized only through labor in conformity with our most profound inclinations. Thus the soul is like a ship under sail, which offers its spread of canvas to many winds and they all help to keep the ship in motion.

As soon as work ceases, anarchy sets in, and the distaste that affects all those who have made their fortunes and remain idle, is a logical result, for it is a general conviction that idleness opens the way to all vice. Psychological unity at such a stage can be realized only through some passion, such as avarice, alcoholic excitement, or morbid sensuality. From whatever point of view it may be considered, work is a great benefit. It is the highest means toward freedom.

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HUMAN VALUE OF COOPERATION

Work, moreover, has a profound significance and a very great human value. Every effort of the learner is bound up with the grandeur of the whole effort of humanity. It is a fact that even our smallest efforts are drops of water which go to form the mighty stream which without them would cease to flow. Humanity is reaching always toward a higher and higher spiritual life; and this spiritual life can not be attained except through the cooperation of those who work. This spiritual life, whose flame is captured by the study of works of genius, is not a gratuitous gift. It must be earned by assiduous effort. The world presents itself before us as a chaotic mass to be set in order. Just as the diamond is encased in a coarse rock-material and we secure the glow and light of the brilliant only by careful cutting and polishing and with the aid of a proper setting, so also knowledge yields its rays of light only by force of patient toil.

It would seem that coming into life at a privileged epoch, we have only to be born, as noble lords, in order to take possession of

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honors and of fortune. We find at hand a prodigious abundance of discoveries, scientific, literary, artistic and philosophic. We are heirs to great wealth. For us Plato, Aristotle and Descartes wove their thoughts. For us the conscientious artists of the Middle Ages built and carved cathedrals and illuminated sacred books. For us religious philosophers studied the human heart. For us Galileo, Pascal, Lavoisier, Ampère and Berthelot wrung secrets from nature.

But we must be capable of gathering the harvest that has ripened for us and we can do so only through knowledge. Pasteur will have toiled in vain if we are unable to understand his discoveries.

The student should picture himself in history and imbue his mind with a sense of the continuity of human effort and of the decisive action of great men and their great discoveries. He also will cooperate with the great ones of the human race by his own toil. To him also is confided a share in the education of the public. One may say that ever since the long past ages of geology nature has done all in her power to set free the spiritual principle that flows in the human mind and which

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would seem to impose upon us this command: "It is your duty to attain the kingdom of the soul." The highest act of freedom of which we are capable is to take this beautiful task to heart, to cherish it above all and to make our poor individual existence subordinate to it. As I have shown in my "Course In Morals" even a youth can understand this view of the unity of life. I desire that even at the very beginning the child should be penetrated with the idea of the grandeur and nobility of work. As soon as he can read he should be able to understand the immense significance of the discovery of the alphabet and of writing. Before their discovery man carried the fructifying seeds of civilization in a bag with a hole in it. The best thoughts disappeared. Memory is so fleeting; oblivion so swift. The art of writing enables us to store in books the rich harvests of superior minds. On these stores successive generations may draw freely to sow the seeds of knowledge in young minds, and we are all still nourished by the seed of Greece cultivated by those toilers of the human mind who were called Heraclitus, Plato, Aristotle and Epicurus.

The discovery of printing, through which

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it became possible to produce a great number of copies of a book, effected a revolution in the world comparable to that which resulted from the discovery of firearms. Before the latter discovery feudal castles were practically impregnable to the common people and a man in armor was almost invincible. Likewise the people, to whom we belong, could do nothing against the oppression of ignorance before the discovery of printing. The salvation of knowledge was the privilege only of the smallest minority. But the printed word put this salvation within reach of the very poorest and set them free from the heaviest of human bondage, that of isolation and ignorance.

Even a child can understand how an elementary theorem of geometry enables us to calculate the distance of a planet. Arithmetic, algebra and finally experimental science have dowered mankind with an inexpressibly great increase of freedom and power.

Let a child become accustomed to appreciate the benefits of the knowledge he is painfully acquiring, let him suppose writing, printing and this or that science vanished from the earth and then study with him the

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disastrous consequences that must ensue. In the ordinary objects of which he makes use let him be shown that they represent hundreds of discoveries realized through the efforts of thousands of workers. In such a spirit let him examine everything from the window-pane that lets light into his room to the magneto of an automobile. Do not let him learn poetry without understanding at the same time that the majority of men, altho surrounded by the splendors of nature were so preoccupied with getting a livelihood, that they would have remained blind to such splendors if it had not been for the great poets and great painters, who, gifted with delicate sensibility and mighty imagination, discovered the beauties of nature and made them accessible to all.

I trust that at some future day every textbook, whether it be an arithmetic or a grammar, will contain a foreword about the great services it renders, about the mistakes, the patient toil and occasional heroism even, of those who have laid the foundations of knowledge. This foreword should tell also of the great discoveries of learning which have been the reward of these toilers in our behalf.

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Cloistered in the soul of each of us are the intelligence and virtues of our forebears, our ancestral line, and I would have every child feel sustained and urged ahead by the efforts of these toilers who have bequeathed him so rich a boon. I would have him grow up with a feeling of respect and gratitude for all those who have labored to rear civilization from the Stone Age down to our own day.

In the simple falling of a stone the most universal laws of nature are in action. So also in every object of study, even in the humblest, the alphabet, there is implied the universal law by which alone society and progress have been made possible. That law is cooperation and inter-relation of united effort. Without this cooperation human nature could never have raised itself from the misery, ignorance and brutality of the glacial era to the heights of Plato, Sophocles, Marcus Aurelius, Descartes and Pascal. The day that a child learns to have a religious respect for the work in which it is his good fortune to share, we may be assured that he will bring to it a very different ardor from that which he unwillingly yields to tasks whose reason for being he does not grasp.

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FRENCH EFFORT THE SAFEGUARD OF CIVILIZATION

To these general considerations we venture to add a word of especial interest to the youth of France. The terrible war which took toll of the lives of millions of the flower of manhood and dealt humanity a blow that staggers the imagination, was started by the German militarist class because the whole German people had been poisoned by an education of pride. Only a small minority of the Germans protested and among them the author of "I Accuse" is remarkable for a mind not deranged by passion. But the manifesto of the ninety-three German intellectuals proves that the élite of German intelligence took on their own conscience the worst lies of their murderous government, the atrocious infamies of their army, the sacking of Louvain, the theft, pillage and systematic ruin of towns and of monuments of art.

No lasting peace is possible as long as this nation through its superior elements shows itself thus incapable of freedom of thought and of a judicial mind. All French writers would have excoriated the bombardment of the Cathedral of Cologne had it been bombarded by

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French artillery. Patriotism would not have blinded the national intelligence to the barbarities that will remain a shame to the German army and its savage commanders.

This results from the fact that in France, to use the phrase of Quinton, intelligence has become "an organ of differentiation." Among our most cultured people intelligence is freely exercised; but we do not permit it to be dominated by the tyranny of the passions. The best minds of France have a common religion—that of the truth. Montaigne, Descartes, Malebranche and Pascal have in their writings propagated the virtue of becoming modesty. Our Claude Bernards, our Berthelots, our Pasteurs have taught us that reality is a treasure of infinite riches and that each of us should gain his share of the truth through work, mistrust of self and unselfishness. From them we have learned also the crass stupidity of intolerance and that it is a sign not of power but of mental weakness. It shows that our reason, incapable of making itself respected in ourselves, gives free rein to the soviets of base thoughts such as pride, sloth and the domineering spirit all of which tyrannize.

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Therefore a French author should have the conviction of the lofty dignity of reason. Students who to-morrow will be moral pilots of the nation, are in duty bound by scrupulous regard for the truth to work in the French spirit which alone can extinguish the folly of national pride. Authors in particular, who form the real government of a country, not a government that keeps its subjects down, but one that appeals to their souls, should consider themselves as missionaries of this religion of the truth. They will not be possest of an authority that strikes the eye, nor of an ephemeral brute strength, but of a lasting and fruitful influence. Therefore our students should join to their resolve to climb toward a higher spiritual plane a living respect for that mighty and purely French conception of work which is an indefatigable and calm pursuit of the truth. It is a national heritage to be bequeathed to those who come after us.

NO EFFORT IS FRUITLESS

But it frequently happens that the reasons which should serve as the best spurs to the will, fail of effect because one is deprest

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with a sense of discouragement. For instance, there is the insignificance of one's actual effort compared to the limitless labor that must be accomplished if one is to become a person of knowledge.

I sit facing my books. Here are my grammars, my dictionaries, my text-books in French, Latin, Greek and English, my books on history, geography and the sciences. They form an overpowering mass before my eyes. I shall never get through them. What is the use of trying? I never can reach the heights of the great men of learning, of the authors whose energy is at once my admiration and my despair.

Weak thoughts such as these are chilling to the heart. We have all chewed this cud of bitterness through long nights when no one was near to comfort us in our childish dismay. We have all experienced in the loneliness of our study these moments of melancholy helplessness and dejected indifference, which the monks call *acedia,* and which is a state of abject languor in which all desire, all hope, all will-power is numb.

Now it is imperative that we have a staunch faith, what is more, a moral certitude

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that our persistent endeavors are equal to any task and that no effort is fruitless.

Often we envy the gift of expression and raciness of style that characterize the speech of certain peasants. I know workmen who have admirable resources of picturesque observation. Superiority is made up of the gifts with which intelligent children are endowed. Every intelligent child has in his knapsack the baton of a marshal of France. In other words he can reach the top rank in the career he chooses provided he have energy and method. To attain a position of authority in one's calling is to have a happy, successful life; and if one is capable one necessarily attains this position if one has the courage and patience to work every day. Socrates makes a charming observation in the *Memorabilia*. An Athenian was annoyed because he had to make a journey to Olympia. Said Socrates: "What is there about the road that dismays you? Do you not spend most of the day walking in your house? Well, then, you will be walking also when you leave here, you will stop for dinner, you will walk again and then have your supper and after that you will take your rest. Can't you

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see that in putting together all the walking you do in five or six days that you will easily walk from Athens to Olympia." Socrates also advised him to set out at once so that he should not be prest for time and might travel by easier stages.

One step seems nothing when compared to the height of Mont Blanc and yet by adding one step to another we reach the summit.

So also in order to reach the summits of knowledge there is no other way than to do one's work hour by hour, day by day, to the best of one's ability. It is the only way to reach Olympia: and the great explorers are great only because day after day they faced the cold of Thibet or the Arctic regions or the heat and perils of the African jungle.

FAMOUS MEN HAVE BEEN AS YOU ARE

We should always remember in our moments of wavering, that famous men, with the exception of a very small minority of rare geniuses, were persons like you and me. Often their intellectual faculties were very unequally distributed, but they had indomitable confidence in the efficacy of work and in the

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extraordinary results we may obtain even with limited capacity provided we persevere. They understood that genius is the gift of perseverance in effort. Everybody succeeds in doing what he aspires to do if he really aspires.

Consider Darwin, a man of mediocre memory and uncertain health whose great work "The Origin of Species" caused a revolution in the world of knowledge that is far from ended. Spinoza was afflicted with tuberculosis and died at forty-five. Pascal was not robust and he also died young. Montaigne complained of his memory, which really was poor and said he had "a languid and dull" mind. Herbert Spencer could not work an hour without feeling ill. Nevertheless through a wise governance of their strength these toiling benefactors of the race have left behind them splendid achievements. I might fill a page with the names of men of mediocre equipment who yet reached the forefront of accomplishment through their energy and perseverance.

The truth of the matter is that the order of the mind compares well with the order of nature. Violent action, earthquakes, vol-

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canoes, floods produce only ignoble results, because it takes time to effect a work of grandeur. Similarly if we work in hurried occasional spurts we shall not produce any great achievement. But with simple drops of water and time nature has sculpted the Alps, taken from the chain of Mont Blanc millions of cubic yards of rocks with which she has filled the valleys, pushed back the sea from Valence to Saintes-Maries and continues to build up the Camargue by grains of sand.

The same process obtains in intellectual work. If you study the childhood of men who have formed the glory of their country, you will discover that at school and later in college they were not always at the head of the class. The greater number of them were not particularly noted by their teachers. But when came the day of sudden illumination, as it came to Malebranche while reading the "Meditations" of Descartes, they became eager for an ordered system of study and gave themselves up to it heart and soul. Generally our destiny is decided in the years from eighteen to thirty, for how fruitful is the silent solitary toil, tho enthusiastic

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and persevering, of which our brain is capable in the ten years of vigorous youth. During these blessed years we make the rich discoveries of which our whole lives are merely a development. In this period brilliant colleagues outrank you without effort in class competition but also they scatter their energies. Your first achievement rises suddenly out of silence and obscurity, as those islands formed some yards below the surface of the sea which are only brought to light through some terrestrial disturbance.

Great men develop slowly and calmly. They advance patiently. Mountaineers who know their mountains are prepared to see the hurrying tourists soon brought to a halt breathless and exhausted. They themselves move at a slow, regular pace. Superior minds move in like fashion. "If I have made discoveries," said Newton, "it is because I have thought constantly of the subject under investigation and have examined it in all its aspects. If my researches have produced useful results, these results are due to work, to patient reflection and study." Before the Association of the Students of Paris Duclaux said: "I do not know whether

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there have ever been any discoveries of genius made without effort and as it were through a sort of divination. In any case none such were made by Pasteur and if he is a discoverer it is because he was silent and persistent."

THE INCORRUPTIBLE ACCOUNTANT

The confidence of great men in the fruitfulness of patient endeavor is due to the fact that they know by intuition there exists within themselves the Incorruptible Accountant and they give him their confidence. They know that he records with scrupulous exactness, to our debit or credit, our thoughts, our feelings, our efforts. On the debit side he totals our minor cowardices, our slightest evasions of work. On the credit side he inscribes our smallest acts of courage, of initiative, of conscientious toil. The day will-power is called upon, this Incorruptible Accountant draws up a balance. You, who have always avoided effort will find none to your credit when some important affair makes demand on your energies and you will fail shamefully. For you, however, who have patiently stored up little acts of energy day

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by day all is easy, for your savings are there with interest added.

The brain is like the earth in that it makes generous return for each seed sown. Day by day the memory has become richer and better organized. The attention has grown swifter and stronger. The judgment has become sharpened. Good habits have acquired new strength and lend one another support. So what then is method, if not healthy habits of thought, habits of strict order, of classification, of experimentation, of a knack of attacking difficulties. Little by little, thanks to the capitalization of acts under the form of active habits, the apprentice becomes a good journeyman, then a master worker, and whether the question be of Latin, mathematics, history, philosophy, medicine or law the student becomes a competent man, then a man of talent, then a master who is hearkened to and whose words stimulate a limitless line of good actions.

But we must not be in a hurry to reach this goal. Let us take as our model an insect that I observed with tireless perseverance make thirty successive attempts to push a crumb of food up a slope that lay before its winter hab-

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itat. Finally it succeeded in its effort. Ants that carry a morsel larger than they themselves, and which causes them to tumble over, never give up the fight, and I have seen them triumph only after sixty attempts. I have made note that to fell a large plaintain tree it required of two men with a cross-saw five hundred strokes. If the balance wheel of my watch went forward at each oscillation instead of coming back it would cover thirty-six kilometers in a day and travel round the world in three years.

Such reflections as these are comforting in our moments of discouragement as we contemplate the vastness of toil involved in apprenticeship to the career of our choice. But the most consoling thought of all is to realize that if we so will no effort is wasted and that through the accumulation of small efforts we accomplish imposing results. Students of any age will gain much by feeling the constant presence of the Incorruptible Accountant. If tonight through laziness I do not get up to verify the exact meaning of a word in the dictionary, or for the same cause do not consult my grammar, this defect is recorded in my brain and to-morrow my every effort

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will be more difficult. But on the other hand if I do not hesitate an instant to ascertain from the map the exact location of a river or a mountain, this very small victory over a slothful impulse is also recorded and to-morrow I set to work with an increased energy. In war victory often hangs on a trifle, as when the Japanese attacked the Russian fleet at Port Arthur. The Japanese had exhausted their ammunition and if the Russians had stood fast for five minutes longer the Japanese would have retired. In the diary of Prince Frederic Charles (December 4, 1870) we read: "If Metz had surrended one day later, if the Second Army had arrived one day later at the Orléans Forest it would have been necessary to raise the siege of Paris."

In the delicate oscillation of motives and impulses that act upon the will as on a scale of weights, often a very small matter will decide for victory or for defeat. In general, victory results from the reserves gathered by the Incorruptible Acountant in the tireless accumulation of little acts of daily courage. The whole past comes to our aid in the present need. But we must be able to say with Pierre Pithou: "I have cared more to do

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my work well than for honors and preferment, for I choose rather to advance than to shine."

What is true of the will is true of the memory for even stronger reasons. How often in the course of my labors have I not had the reward of recalling a thought read somewhere which had been lying dormant in my memory for twenty years! How admirable is this power of the brain never to let anything be lost! For that matter when I lecture and when I write I make use of acquisitions that date back fifty years. This I owe to the early habit of earnest study.

When a scholar makes a conscientious effort to understand the meaning of a phrase in the translation he is doing, or to follow the logical course of a succession of theorems, his effort is no different from that of a Montaigne, a Descartes, a Lavoisier, or an Ampère. In their best moments they did no more than does the courageous student who devotes himself wholly to his work. When he strives with all his power he does precisely the thing that the greatest men did in order to become great, and they are in this wise his equal. So also when the scholar

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writes with correctness and in character true to himself he is doing only what the greatest writers do. Whenever he works with his whole heart, he is one with the greatest. The masters are superior to him in only one point, namely, that they renewed and repeated these earnest efforts day after day, week after week, during years and years, and as the Incorruptible Accountant had recorded to their credit these innumerable efforts, they had all the accumulated power resident in the past, all this intellectual fortune saved cent by cent. But in their youth they had no more than other youths, and perhaps they had even less. Often they were discouraged as others are, because they found the road long and dreary. Many who might have been great men stopt midway in their climb to the summit, just as there are youths to-day, who tho naturally courageous, at some ill-fated hour of discouragement halt and are lost. Thus it is necessary to add something each day to the total of energetic effort in order that, without exhausting oneself, one quietly and gradually achieves the long ascent to the top of the mountain from which stretch vast horizons.

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We must not forget that the Incorruptible Accountant has not the charity of a guardian angel. He is inflexible and deaf to piteous entreaty. He records whatever is to be recorded and is never generous except to those who are rich in their record of effort. We must never forget his presence and have a care to avoid the error of acting against our own best interests.

A failure, a ne'er-do-well, bitter and envious of mind, is always a jailer of himself, *Heautontimoroumenos,* as described in the Latin comedy of Terence, who has stupidly overburdened his debit account, and has installed within himself and strengthened day by day a foe who knows no mercy. It is truer than we think that our life is the appointed task of each of us, and that it becomes only what we make it. The quality of the work that we are able to accomplish is the most complete verdict on the individual. He who does not create is no more than a shadow, a simple nothing. To live is to create, therefore to work.

We may say of work what Montaigne said of philosophy: "It is wrong to picture it as

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inaccessible to children, and having a scowling, forbidding, and terrible face. Who has masked it in this false-face? There is nothing gayer, more gallant, more hearty, and, I had almost said, playful."

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II

REAL INTELLIGENCE AND PSEUDO-EFFORT

Because a man is worth what his work is worth it is necessary to have an exact definition of the meaning of the word, work, in order to distinguish between real and pseudo-effort and thus recognize the counterfeit that easily deceives superficial observers. In the first of his "Evangels" Emile Zola wrote:

"I beg of you to have faith in work. Life means nothing else and has no other reason for being. Each of us comes into the world only to do our stint of work and to disappear. Youth—youth be earnest and diligent at work. Let each and all of you accept some task which is sufficient to occupy your life. It may be the task is very humble, but it will be none the less useful. Let it be what it will, as long as it really exists and it keeps you going. When you have it well in hand it will fill your life with health and happiness. What a sound and admirable social organism would

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that be to which each member contributed his due share of work. . . . What is more I am convinced that the only faith which can save us is belief in the efficiency of accomplished effort."

But sometime later Tolstoy protested:

"Work? To what end. The manufacturers and sellers of opium, tobacco and brandy, all stock exchange gamblers, all jailers, all hangmen work; and it is plain that humanity would only be the gainer if all workers ceased to work. As a matter of fact would it not be a good thing if the men who are the most busily occupied allowed themselves a moment of respite in order to have time to reflect and question and examine the utility of what they are doing? And what is still more important should not young people, before entering the great world of life as they leave college, look well about them and follow in thought the road they are about to take in order to know where it will lead them? How can they know what is the best work to do if they do not pause before taking action in order to question, compare, meditate?"

Nothing is juster than this remark. There is work that is useless and is not worth the

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trouble of performance; and there is work that is harmful and even pernicious.

Is there a touchstone by which we may distinguish the copper from the gold, and true effort from the false or spurious? We must have recourse to the principle which dominates education as recorded in my volume "A Course In Morals." We read that "all work is harmful which tends to diminish in any way the freedom and energy of thought and to destroy the only condition that makes them possible namely, whatever is just." Thus one puts away the immense quantity of harmful effort, which is nothing more than the exploitation of human stupidity and vice by the clever and unscrupulous. We may call them workers in evil trades, whether engaged in grafting on their fellows, in purveying pornographic or criminal literature, in shameless party journalism or in catering to the passions of the populace as politicians, who thanks to the facility of their tongue or speech hope to attain success more quickly than through honest labor.

But this question of evil occupation is a social problem and we have leisure only to cast a passing glance into its dark abyss. We

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shall rather confine ourselves to an examination of false intellectual effort so that we may know how to distinguish it from the true.

As has been said of effort stimulated through the fear of punishment and the promise of reward indolence is a perfidious and hypocritical passion. It is most ingenious in evading work. In point of fact there is an enormous number of appearances of effort which in reality are merely evasions of effort.

A child, it has been shown, is so adroit at giving the appearance of working that through sheer weariness his teacher resigns himself to its trickery. The conspiracy of the least possible effort is universal. If, as has been declared, social relations are based on conventional lies that lead us to seem not to perceive the realities, so also our educational system is based on a tacit convention by which we agree not to notice that we are receiving counterfeit money. All that is necessary in order to observe the simulation of effort is to enter a heavy and languid study hall at about six o'clock. Maps, books, papers are everywhere to be seen as the seeming evidence of real work. Just as warships

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loosen a smoke screen to shield themselves from the enemy so our scholars spread a simulation of real effort in their written and oral exercises as any one knows who has conducted examinations. There is an incoherence of thought in a very fog of words and abstract formulas about subjects of which they have only the vaguest ideas. There is a total absence of profound and earnest effort, of logic, of organization.

Even in our higher circles of education there is the same tacit conspiracy to accept the seeming for the real labor. Our university libraries are choked with theses on law, medicine, history, the natural sciences and, alas! even on philosophy, which represent only pseudo-effort, an accumulation of gathered facts without the illumination of the individual mind. They are not worth the paper they are printed on.

DEFAMATION OF WORK

The history of the French word for work: *travail,* is very significant. It comes from *trabs* which was a device of wood used by blacksmiths to facilitate the task of shoeing horses. Hence there is involved in the word

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a sense of constraint, strain, fatigue. So it happens that in our French language, which came to us from the lower Latins, something pertains to the word as a kind of stigma of slavery. It is to remembered also that in the religions proceeding from the Orient work is considered as a punishment.

Ancient thinkers never for a moment stopt to reflect on the effects of work. They did not understand that it is a healthy condition of body and mind and a condition of all greatness and ability.

Socrates, Plato and the Stoics, who gave shape to human thought for centuries, are chargeable with having done an immense wrong to the world by their haughty contempt of work.

In modern times, Socialist writers, excepting Proudhon, blinded by the irksome monotony of industrial toil, have continued to consider work a curse; and vanity, that wretched servitude of opinion, has led astray some minds that might have reaffirmed the truth. Idleness, being a mark of station, the proof of independence, gained a prestige not at all deserved if we judge by its disastrous effects on mind and morals. The prejudice against

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work is the result of an age-long tradition which has never been subjected to searching criticism. Yet it would have been at any time easy to observe that healthy children run, jump, climb and indulge in other fatiguing efforts which require considerable energy. If work burdens them it is because their minds have not been properly attuned to it and because they do not know how to regulate their expenditure of energy. In every healthy person the need of action is primordial. Games and sports are merely childish means to satisfy it.

COUNTERFEIT PRODUCTIONS

It is important to distinguish real work from the spurious so that it is not held accountable for counterfeit productions. Our higher educational system, which ought to have maintained at a lofty and clear level the idea of intellectual effort has not been strong enough to stem the tide of pseudo-effort. Many professorial chairs are occupied by mediocrities because of the tacit convention that the plodding labors of dull minds and the mass of their production equal in value the product of true intellectual effort. Le

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Dantec writes on this point as follows: "Study the fifth pair of the thoracic legs of a lobster. X. has written a beautiful work on the fourth pair. One sets about the task and studies all that has been published on the subject, and this is called covering the bibliography of the subject. At about the end of two years one has the materials for a thesis and produces a stout volume of 200 pages, illustrated with beautiful and expensive plates. One is qualified for the doctorate." Le Dantec adds that except in the rare cases in which we need information about animals useful or harmful to mankind in the struggle for life, studies in zoology can comport only a philosophic interest, that of the origin and descent of species. It is because so much pseudo-effort is mistakenly employed in scientific pursuits that we are accumulating enormous useless libraries. In history, also, are we not deluged with articles, reviews and books that are merely lumber?

It may be that the decline in education can be attributed to the so-called realistic literature, which held sway in France after the war of 1870—combined with the invasion of German erudition. To mediocre minds a

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clearly stated fact has a scientific value. A fact may be likened to a chiselled stone which an architect will use in a building. The stone itself is nothing. The great majority of facts have no scientific value. Only significant facts have such a value. The others encumber the mind and scatter the attention. What is more, a fact is significant only for a thoughtful and questioning mind. Every discovery has inception in an idea at first vague as a presentiment. For a longer or shorter period it lies dormant. Then suddenly a fact, often a familiar fact, becomes of decisive importance. There flashes the electric spark which causes the combination of elements that hitherto lay side by side but inert. Such was the fall of an apple for Newton, the swinging of a lamp in the Cathedral at Pisa for Galileo. In his admirable "Introduction" Claude Bernard tells us that every scientific observation is the answer to a question. Unsound thinkers, who are incapable of putting a question, never succeed in doing more than amassing useless facts because disorder is useless. . . .

The custom prevails among our universities of exchanging theses at the charges of the

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candidates for the doctorate. Within a few years our university libraries will be submerged by the rising flood of mediocre productions which add nothing to the intellectual capital of the nation. The time spent in these unoriginal compilations would be better employed in translating, with full historical annotation, some valuable work from the English, the German, the Italian and other languages. Such productions would enrich the common fund of intellectual effort; and also they would be of much higher value than theses which are ill reasoned, ill written and devoid of vigor and individual stamp.

PRECEDENTS

Dread of effort is the cause of the exaggerated importance of precedents in our courts and our government. In his horror of the toil of initiative, sheepish man never thoroughly examines anything except at the ultimate urgency. He prefers to waste his time in seeking a previous decision. It matters not whether this previous decision was determined by some thoughtless impulsive person. He is saved the trouble of thinking for himself and all he has to do is to follow

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in line. So it is in the Alps, where the guide studies the pathway, deliberates and decides. The others, tied behind him, merely put their feet in his tracks in the snow. In the higher altitudes this work of making the tracks is very fatiguing because it requires an uninterrupted effort of the attention. His followers suffer only physical weariness and climb the heights in a real torpor of the brain, which, by the way, is not a disagreeable sensation.

In the various branches of government all work tends toward decisions to be made. Rather than venture a choice and individual deliberation, feeble minds, which are in the majority, lie in the trenches of precedent and it is difficult to dislodge them. In philosophy and also in religion they take refuge in some system and thenceforward they let others think for them and are relieved of the effort of decision. Whoever questions the system becomes a disturber of their personal tranquillity—and they were so tranquil! Must they now bestir themselves to think, which requires effort, time and laborious patience? Has this interloper the audacity to ask them to examine into something that is wholly contradictory to their convictions? Does he

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hope they will correct the error so agreeable to them because it flatters their thoughts and secret yearnings? By no means. He is not to be tolerated—a plague upon him!

Next to those prideful persons who are hurt by having their notions contradicted the fanatics most to be dreaded are weak-willed people. Exasperated because they have been disturbed in the quiet security of their convictions they feel that they are being forced out again to face the winds and waves of a troubled sea when they had so snugly settled in port.

The fact without value flourishes most rankly in the study of medicine. From the beginning students incline too much to the memorization of facts rather than to methods of investigation. Trousseau in his "Clinique Médicale de l'Hôtel Dieu" reports that the intelligence becomes more slothful in proportion to the increase of scientific resources. This is because the intelligence is "content to receive and enjoy and is disinclined to create and elaborate." Even students of exceptional aptitude yield to an easy method of acquisition and "habituating themselves to produce nothing, gradually sink into

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a kind of mental inertia." Their predecessors, not so well provided with knowledge, "were always animated in their work with the aim of production. . . . They constantly exercised their mental capacity as athletes exercise their muscles." Prospects of grandeur and fruitfulness abounded in their view while you "who have a wealth of means at your disposal, are spoiled, satiated . . . and knowing only how to receive what is so prodigally offered, your intelligence chokes with obesity and dies unproductive."

In order to understand the absurdity of this waste of attention one has only to observe a group of medical students in a hospital hurrying from bedside to bedside of a dozen or fifteen patients.

The habit of pseudo-effort may have disastrous consequences. In the *Revue de Paris* (Nov. 1, 1917) Dr. Jean Fiolle relates that in 1914 our surgeons, owing to erroneous preconceived ideas, were not supplied with the proper equipment for war service. The means of sterilization were faulty and at the front or near the front it was impossible to undertake an aseptic operation. Pasteur's ideas in all their clamorous evidence had not

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succeeded in destroying prejudices. How many of our young men paid with their lives for this failure to see things as they actually are.

Again, General Fonville states in the *Revue de Paris* (June 1, 1916) that too many of our officers set forth ignorant of the lessons of the Russo-Japanese War and the Boer War and with their minds full of antiquated ideas about war.

NECESSITY OF REVISED METHODS

As a result of what we have learned during the war we should revolutionize our methods of education so that the cultivation of the intelligence be fixt on a sound basis of liberty. As things have been, initiative was excluded from our system and we have all along been imposing on youthful minds ideas from the outside instead of supervising their natural development in the soul of the young.

By overweighted educational curricula we have made such development impossible because it requires time and consideration of the personality of the pupil. We have no opportunity to rouse independent energy. In truth we have no faith in liberty. We con-

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fuse it with its counterfeit, anarchy. All profound culture of the intelligence puts us in touch with the eternal laws of reason. Anarchists are rhetorical and superstitious people who substitute big words for facts and believe in a miracle of social order. They refuse to lower their glance to observe the sad realities of human nature. If they would only study the subject honestly and judge their daily conduct without leniency, they would see that among mortals as imperfect as we are a perfect society is impossible. Too many human beings are still at a close approach to the primitive brute as the case of the Bolsheviks proves.

Instead of having our gaze fixt on an ideal that can not be realized let us accustom ourselves to look upon that which is possible. In place of the culture of a chimerical imagination let us adhere to the culture of the intelligence, which is different from the modern product of pseudo-intelligence. We are manufacturing cheap imitations of real intelligence. Many of our scholars possess an extraordinary facility in the use of words. Like certain coquettish ladies who can afford to change their costume several times during

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the day, they have a great wardrobe of words to clothe a very meagre supply of ideas. An idea for them, we may say, is only a manikin on which they drape the shimmering texture of words. There are many persons in France who think they have actually accomplished something when they have only spoken pleasingly.

REAL INTELLIGENCE THE RECOGNITION OF THINGS AS THEY ARE

Verbal facility is merely the counterfeit of intelligence. Real intelligence is the comprehension of things as they are, of the reality of things; and the touchstone by which we are enabled to identify the genuine metal is action. Errors are constantly made in judging intelligence. Saint-Simon in his volume on "Great Authors," for example, says of Louis XIV that his desire for greatness and power was impelled by a mind below mediocrity but "nevertheless very capable of forming itself." This capacity of forming itself, that is of profiting by one's experience, is the definition of real intelligence. The rest of the portrait Saint-Simon draws of the king confirms this statement, because

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he credits him with an accurate mind and great tact. That is to say with an exact sense of the realities. This *sense of the realities* is the substance of real intelligence. To be intelligent is to distinguish clearly what is and what is not, what can be done and what can not be done, what harmonizes with a fact and what does not. To be intelligent means to be able to view a matter as clearly as we see the objects that lie at the bottom of a pool of transparent water. This limpid gaze of the intelligence presupposes a calm and free mind. That is why it is not to be found among those who are light-minded, insincere and over-emotional. The slightest emotion that causes a wrinkle in the countenance of the soul disturbs the image of the reality. It interferes with the delicate action of motives and causes that operate in the act of thinking.

THE CASE OF NAPOLEON

The most instructive case of the derangement caused by passion in the complex and fragile mechanism involved in discernment of the real is afforded us by one of the mightiest brains of the nineteenth century and by

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one of the most transparent and proximate of realities. As early as 1809 the vision of Napoleon lost its keenness. His pride grew greater and disturbed the perception of things as they were. Napoleon overestimated his forces and underestimated those of his adversaries.

One of his faithful adherents, Decrès wrote of him toward the end of 1809: "The Emperor is mad, quite mad, and will toss us all, many as we are, head over heels and the end will be a frightful catastrophe." The war of 1812 was an act of madness because the Emperor did not properly appraise its difficulties. A profound analysis might be made of that period when in this mighty overworked brain began the degeneration of the sense of the realities. A similar study might be made of the obliteration of the sense of the realities in a man much less intelligent, but long possest of a realistic mind, namely William II, the criminal instigator of the war of 1914. He declared war because he was choked up with illusion. He counted on crushing France in a few weeks. The Prussian General Staff had long been convinced that France could not withstand an assault

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by German arms. William II also committed a great error of judgment about the resistive power of Belgium and especially of England. This is a classic example of pseudo-intelligence, because the conceptions of the mind did not measure adequately with the realities.

In a similar manner our historians and politicians, whose duty it was to keep the country advised and guarded, did not reveal to us the real Germany but offered a counterfeit presentment. This flattered our national pride and saved our administrators from the disagreeable duty of taking vigorous action.

The pseudo-intelligent dislike to look the realities in the face because they always demand to be met and require the effort of adjustment. When they speak of the real, they are thinking only of themselves, of their self-esteem, their ease, their indulgences. They do not want to believe that what is true, is true.

On this important point I will cite another case. As a danger threatening the scholars of a certain boarding-school I called the attention of the head master to the fact that sixty feet of gas-pipe ran along the wall of

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the dormitory to connect with a gas-jet. It constituted a constant menace. Instead of looking at the fact as a fact he began to defend himself. The pipe was there before he came to the school. He had no authority to incur any expense, etc. . . . I was striking futilely at a mind incapable of dissociating itself from the fact under observation and of perceiving things objectively.

Here is a picture of another pseudo-intelligent: "He judges the acts of his subordinates through his feelings of the moment, either sympathetically or apathetically. He can not see objectively anything that bears upon his personal self. Errors are adjusted, whether insignificant or serious, according to his liking or dislike for the person who made them. The services rendered by an employee are important or unimportant according to his state of mind at the time he learns of them."

INTELLIGENCE IMPLIES A STRONG MORAL EDUCATION

We recognize the unintelligent by their inability to see a question dissociated from themselves. The childish peoples were the

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wholly emotional peoples. Their only logic was the logic of feeling, that is to say, the absence of reason, the refusal to accept objective reality. Almost all Asia is in this state of mind. The Greeks were the first to reason and free themselves from credulousness. To-day Germany, blinded by the arrogant folly of the Pan-Germans, has to the world's sorrow become an emotional nation, driven by a monstrous ambition. There can be no complete intelligence without a strong moral education. I must be disinterested, accept the truth whatever it means to me, whatever contrariety it causes me, whatever it costs me. The weak flee from the truth. They are willing to deceive themselves and in their cowardice prefer a pleasing lie to a disagreeable truth. This holds true in all circumstances of life. It holds true of the unperceiving man who marries a slothful flirt ready to laugh at him when he complains that he is being transformed into a beast of burden. It holds true of the mother who credits her child with qualities he does not possess and seeks to avoid, for she sins by her refusal to look reality in the face. Generally the business of seeing

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things as they really are is a disagreeable one. Reality becomes intolerable because it is always at our door whether we like it or not, and shows serene indifference to our inclinations, our preferences and our affections. Suppose we try to avoid facing it? Perhaps through some chance happening, a miracle, the difficulty before us will disappear or at least suffer some change.

Alas, it neither disappears nor changes. If we will we may bury our head in the sand as the ostrich does to avoid sight of danger, we may close our eyes and try to lose it in a fog of phrases and formulas, but reality is tenacious and holds its ground.

We now have come near to the knowledge of what constitutes true intelligence. We understand that to be able to express the same idea in ten different ways is no proof of intelligence. Every feeling that interposes itself between the reality and our vision, which causes us to see yellow as white, or green as red, diminishes or destroys our intelligence. To be intelligent we must be free with that freedom specified by Spinoza, which is to accept with humility of heart and, we may say, if not with love, at least with tranquil cour-

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age, the reality of things as they are. Only such acceptance enables us to look things in the face and discern them accurately.

Then we may inaugurate some action qualified to modify conditions. If the partial mother would resolve to recognize the fact that her son is vicious she would be able to combat this evil through efficacious methods. By closing her eyes in her partiality of mind any miracle she may expect fails to materialize, for the logic of moral realities as the logic of physical realities develops effects from causes slowly but with inexorable vigor. The child is idle and vicious and must become a failure. Your pride, William of Germany, prevented you from seeing the truth and so your might is shattered. You, people of France, had half shut your eyes toward the truth and consequently victory has cost you a frightful price.

INSANITY: THE DISTORTION OF THE SENSE OF REALITY

Among the patients at St. Anne's Hospital I found that to those suffering from mental maladies such physical ailments as headaches, spinal pains and weakness were of

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slight importance. This is a characteristic of the distortion of the sense of the realities. It is the inability to see or understand the reality as it is and in consequence the inability to connect action properly with the reality. The perception of every-day happenings is falsified, and falsified also is the judgment on men and affairs. Observe how this jealous woman is suspicious of the most innocent comings and goings, how this anxious mother imagines some tragic circumstance as the cause of a delay that is most natural and obvious. Mental derangement is the result of morbid feelings which distort the perception, the judgment, in a word the intelligence. All distortion of the intelligence by feeling is kin to mental derangement.

But we denominate as deranged persons only those whose pathological emotions not only disturb their vision of the realities, but also vitiate the solid organism of consciousness formed by the experiences of countless generations of whom we are the heirs and which is known as reason, or technically as logic. Reason is the toll taken by human intelligence in age-long struggles against nature. In the beginning belief spread in many absurd

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directions but by degrees experience closed all roads leading to pitfalls. Millions and millions of mankind have perished in consequence of erroneous belief. In the course of centuries discipline was established and broad highways were mapped out in the magic forest of error and ignorance. These highways are the laws of reason. A thing can not be the thing it is and its opposite, every effect has a cause, etc. So we classify as insane only those who are unable to control their feelings sufficiently to allow their intelligence to subject itself to the laws of reason. But it is a question of greater or less degree. Through levity or feeble energy few men are fully capable of such control. The greater number let themselves be swayed by waves of sentiment. These are persons of erratic, incoherent, weak-willed and unstable character, who, according to some alienists constitute a large proportion of humanity. In the inability to think logically lies the deepest difference between the intelligent person and the person who is unintelligent. One may possess wit and be capable of unexpected sallies that elicit laughter such as to describe a jackass as a rabbit that has

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attained full growth. But to the educational mind, which bears the seal of distinctive intelligence, only pseudo-intelligence is recognized in the quickest shallow wit even when it has at its disposal the most abundantly furnished of verbal wardrobes.

Real intelligence is the intelligence wholly attentive to the realities and to that quintessence of reality which is reason.

Be witty when you have a solid and substantial foundation of intelligence and then what you say or write will have charm. If the superficial qualities do not rest on a granite base, your words are without value and your action will surely be perilous.

REALITY IN THE CLASSICS

Our great classics, like Corneille, will always remain young because, like Antæus, they constantly renew their strength by supporting themselves on the realities and because their compositions are admirable in truth and logic. They reflected much, and diligently studied in themselves the delicate play of thought and feeling which they embodied in their characters. On the other hand, romantic productions, because they

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lack verisimilitude, do not endure. It is arduous to witness a performance of "Ruy Blas" or of "Hernani," despite the splendor of the verse, while a good farce based on sound principles of reason, such as "The Imaginary Invalid" plays as tho it was written only the other day. Even in fantastic literature as produced by such masters as Rabelais, Molière, Cervantes and Swift the foundation of the work is logic. They see things exactly, coherently and in strict harmony with the laws of reason. No unruly passion distorts their judgment or the underlying order of the relations of things. Their fantasies never sink into absurdity or incoherence because clear intelligence never loses the sense of truth.

LEARNING IS NOT INTELLIGENCE

We understand now that real intelligence is different from learning. One may become very learned and remain unintelligent. Among the most unintelligent people I have met were two college professors. A man may be a hard worker, a plodder who is bent double with useless toil and yet never have measured up his learning with personal ex-

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perience. A mass of encyclopedic information has nothing in common with real culture. To collect facts and put them together as a player puts dominoes, a six next to a double six, a five next to a five, is purely a mechanical effort that may be wholly devoid of thought. The Germans excel at confounding precision with meticulousness, gravity with dullness, and they seem to consider the brain as a barn to be packed chockfull.

Let us hold fast to the truths we have discovered. To be intelligent is to look reality in the face and to be inspired by the highest element of reality—reason. Only such clear-sighted gazing on the truth of things permits of truthful action and the modification of the reality by ideas. Whatever distracts our mind from the double reality, that outside and that within us, will tend to stupefy our intelligence. "The natural appeal of the soul to the truth," which is the attention, may be disturbed, distracted, led astray by passion, pride, love or hate, partizan feeling. It follows therefore that we can not hold the truth close to us except through a severe discipline of the sensibilities. This discipline is the highest form of individual liberty.

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No one can enter into the abode of the truth unless he be a man of character and uprightness, because it is only through this condition of self-mastery that one can become a free intelligence. All others are slaves to idleness, dissipation, to their appetites and to their passions and they are lacking in the purity of mind through which we gain entrance to the sanctuary. But this is only a preliminary to such admission.

WHAT ONE KNOWS

We may find ourselves halted on our march to the truth by two dangerous enemies within us. One is cowardice or indolence in facing effort; the other is impulsive striving for the truth which makes irksome any prolonged suspension of judgment and conviction. Without the twofold energy to persevere in our effort to the end and to refrain from forming a judgment before confronting our knowledge with external and internal reality, the truth evades us and our intellectual acquisitions are only pseudo-intelligence.

For example my knowledge of the metric system will never have any reality until I have confronted it with facts. I have a the-

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oretic idea, which is very precise, of the length of a kilometer. From the top of my native mountains I have often seen stretches of a hundred kilometers, which are very concrete and real to my mind. I know by frequent muscular experience what is a vertical height of six hundred meters, of twelve hundred meters, of three thousand meters—but for lack of actual experience, I do not know what is a height of twelve or fifteen meters and so I make errors in estimating the height of a monument, of a tree. Six hundred vertical meters are a realized knowledge, fifteen meters are a verbal, abstract knowledge.

It is not so long ago that my knowledge of a hectare passed from the parrot stage to that of experimental knowledge, the real knowledge. A student in mathematics who, in accordance with given figures, makes a cardboard lamp-shade, knows experimentally what a cone is, while a student in rhetoric frequently has only a pseudo-knowledge of the same thing.

Similarly, if I take up the fire-tongs and burn my fingers, the conductive power of iron for heat becomes a matter of practical and experimental knowledge to me, while knowledge

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of some other things remains in a state of limbo, midway between heaven and hell, and this is called book knowledge. The latter is the beginning of knowledge, but not the real knowledge.

THE MORAL DOMAIN

For a stronger reason moral knowledge remains abstract and verbal when it is not confronted with personal experience. Also all learning is vain and all inquiry into the reflections of others, if it distracts us from the essential task which is, for example, to compare the statements of a great author with our own experience. Reading that is done without this active effort that no one can do for me, since my experience is original with me, is only pseudo-effort—the mere business of memorizing. If I study the character of *Pauline* in Corneille's tragedy "Polyeucte" it is necessary that I have the experience of the calm force which comes to a soul as the result of the loyal accomplishment of unattractive duty, even if in my case it be only a disagreeable task to which one gives oneself with complete devotion. I shall know then through personal experience that by such an

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act the soul receives a something analogous to what the faithful term "grace," that is to say an uplift and an ennobling of spirit. This experience must have been frequent with so pure and conscientious a genius as Corneille. We are able thus to understand, by a kind of transmutation of experience, how *Pauline* who loves *Severus,* but who, because she is the wife of *Polyeucte* maintains an attitude of impeccable righteousness, is led by this very fact to a nobility of heart that renders her capable of a faith purer than that of the pagan religion and elevates her to heroic heights of the soul.

Whoever has not experienced comparable moments of moral energy can not understand the tragedy of Corneille.

Let us consider Molière's farce "The Imaginary Invalid." To understand the profound reality of this immortal farce we must unfortunately have suffered such moments of intellectual depression which help make the fortunes of manufacturers of miraculous remedies and during which we hearken to every encouraging word. Then we can realize the state of soul of poor *Argan* who was enraged against those who ridiculed con-

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sultations and prescriptions and wretched at being abandoned by his physician.

"Look within yourself," says Marcus Aurelius, "for there lies the source of good, an inexhaustible source provided you draw upon it continually." Likewise within ourselves lies the source of all moral truth, provided we draw upon the realities of human nature and for this it is enough to feel oneself live and to meditate upon one's personal experience. I regret deeply that it cost me years of work to make this discovery which none of my teachers made known to me. Perhaps they did not know of it themselves. Thus it happens that we may read the noble pages of Maine de Biran and of Ravaisson on "Habit" and fix them in our verbal memory without comparing them with our personal experience. But continued study within ourselves of a good habit and a bad habit enables us to know really the tendency created by an act repeated and to surprize the strange need that springs up within us, the instigation, the disquiet and the suffering which result from inability to satisfy the need. For example, one who is very fond of smoking will look everywhere for a cigar he has mis-

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laid and he feels a sense of irritation and irksomeness if he can not satisfy his tyrannical habit.

It has often happened in my classes of philosophy that I found the students were bored and abstracted over the principles of reason, a heavy subject and as far removed from every-day life as the subject of the ring of Saturn. I invariably roused my listeners by showing that these principles can be understood by a child and that they are implicit in our simplest acts. If on entering the room I should say that Peter, who is here among us, is in the next room what would you think of me? That I am crazy? Nevertheless millions of human beings have believed and still believe that at one and the same time one and the same person can be in two places. The belief in the double presence has been universal. We do not believe in it because innumerable experiences have implanted in us with absolute certitude the principle of identity. If any one to-day were to act as if he believed otherwise he would be considered of deranged mind. So also there are many of us who believe that there is no effect without a cause and philosophers hold the necessity of the

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principles of reason as the only objective reality and as constituting the very foundation of thought common to all thinking beings.

Everywhere we should recognize that to be intelligent is to penetrate reality and that we may penetrate it only through a kind of delicate tact, of sympathy which develops from a long kinship with things. Thus it is that a good physician knows what the sufferings of his patient are just as a mother "has her child's headache." So we understand things only when we have known them for a long time. To be intelligent is to be able to orientate oneself in the real through the habit of seeing calmly and lucidly that which is or exists.

NECESSITY OF REALITY IN POLITICS

In politics the need of real intelligence is urgent. Consider the demagog who tries to draw a picture of the persons from whom is to be taken the money he would distribute under divers forms to his election agents and his hangers-on? Were he to succeed, for lack of clear understanding of economic realities, he would succeed as in Russia in ruining the best elements of the nation. In the eyes of

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the demagog the only persons worthy of consideration are the failures, the good-for-nothings, the incompetents. A man who succeeds by energy and effort as well as severe prudence is by that very fact held under suspicion.

Our governments, whose primordial duty should be to take the lantern of Diogenes and seek out men of intelligence and of character for responsible posts, have so little time that they nearly all fail at this the one necessary task.

However the departments of government are too often the shrines of outworn traditions and closed to new realities. They exist on "precedents." Deprived of the stimulus of minds capable of distinguishing what is false, decrepit or dead, from what is properly alive they very often form a heavy obstacle to progress. Thus France has lain asleep and allowed an enormous part of her natural resources to be undeveloped. Compare our antiquated organization of the Ministry of Agriculture with the practical and energetic organization of the same department in the United States and you will be edified. A foreign correspondent of the

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Paris *Temps* wrote (December 2, 1905) of Sergiei Witte, the Russian administrator, as follows: "He works from morning till night and from night till morning tirelessly as a horse, but in the manner of a functionary or a monk who knows not men and considers only words and ideas." The correspondent pokes fun at his confidence "in the curative properties of administrative reports."

HOW TO DISCERN THE BEST MINDS

If we insist strongly on the distinctive character of real intelligence it is only because we have never seen a treatise on this capital subject. Our leaders have no sure means of discovering budding talent and they are embarrassed by the great number of pseudo-intelligent individuals produced by our colleges. Verbal facility and even eloquence can coexist with a lack of real intelligence. The former gifts are absurdly overvalued. Whoever is acquainted with our superficial methods of education must know that they do not tend to help intelligence of an original sort.

This is a dangerous state of things because a nation can make its future secure only by

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keeping its most vigorous minds at the forefront of affairs. Rome and Greece declined rapidly because their incessant foreign wars, their civil wars, and their mass proscription, exile and execution deprived them of their choicest minds and personalities. Men of high worth are the prey of many jealous and hostile persons because they will not stoop to trickery. They are accustomed to look people and facts in the face, are not presumptuous, meet difficulties and routine courageously and intelligently and call a spade a spade. Under the régime of demagogs they are the first victims of the new order. Political massacre is a convenient and expeditious method employed by the party in power or its adversaries to ensure their silence. When a sufficient number of demagogic parties succeed one another in attaining power no man of solid worth remains. Thus Octavius allowed Cicero to be killed.

Furthermore in Rome, which had conquered the world, the period elapsed between the first massacres and the invasion of the barbarians, about five hundred years in extent, was lost to the development of the human mind. In this dull time we find only

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rhetoricians and some historians like Tacitus who were unable to understand the causes of the decadence. No great physician of genius, no great philosopher could develop in such an age. Progress and inventiveness were lacking also in military arms and strategy.

In the political field matters were at their worst and the people tolerated as rulers and even applauded such sinister madmen as Nero, Caligula, Commodus and others. No new institution came into being in the social organism. In a word we observe the terrible downfall of a nation that allowed its choicest men to perish and did nothing to reestablish itself.

Is it not true also that in 1919 Russia offers a spectacle of the terrible peril of extinction incurred by a nation which is bereft of its best citizens? A long régime of oppression swept away generation after generation of the finest Russian minds and personalities. Every Czar sent the best and bravest young men of the country to prison, to Siberia or to the gallows. Of those who managed to escape from exile the greater number became mentally deranged, because of their suf-

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ferings and the anguish of being torn by the roots from their native heath whence man draws the proper nourishment of his brain and feelings. Through the constant loss of her brainiest and most energetic elements Russia sank into fatal decline. The day the corset of steel cracked, by which the nation was artificially kept on its feet, it could do naught else but fall.

We might add the case of Austria-Hungary in which country a stifling police régime and a stupid dynasty had extinguished the last breath of liberty of mind. One result has been, as Wickham Steed writes in his "The House of Hapsburg," that this immense country has not produced a great writer or a great savant in a hundred years.

Even here in France we almost lost status as an independent nation in 1914 because a badly organized political régime had filled the highest posts with mere images of men and had so often cast aside real leaders who were capable of profiting by the experiences of the Boer War, the Russo-Japanese War and the wars in the Balkans and of putting the lessons learned there to our practical advantage. Happily we were able to redeem

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ourselves in time,—but only at a terrible cost —by the elimination of hundreds of officers of pseudo-intelligence.

Thus it is evident that the ability to distinguish real from false intelligence is a matter of life or death for our country.

True intelligence is the limpid light of the attention which penetrates to the depth of the realities. Only an exact knowledge of the realities permits us to act upon them. This knowledge implies a high degree of self-control, disinterestedness and purity of soul for as Confucius tells us, "The high light of intelligence presupposes moral perfection." This is the noblest form of human liberty. It is very rare also, for the most of ready talkers try to substitute the counterfeit for real intelligence.

Our dead shall have died in vain if on the morrow of victory we do not introduce thorough reforms in our systems of government and of education. True government is to place competent, energetic and really intelligent men at their post, which is the front rank.

The education of a nation is the formation of its people. They are not formed by

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our present methods which tend to develop rhetoricians. The right sort of people are obtained by developing observant minds, wholly respectful of facts, that is to say, scientific minds. They must also have sufficient energy to incorporate in the realities their ideas and the hypotheses suggested and constantly readapted in the process of experience.

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III

HOW TO WORK

As Poncelet watched the operation of one of those large wheels which take up water in troughs and are propelled by the weight of the water he noticed that much power was lost in transit. He invented a means of avoiding this waste and doubled the driving power of the wheels which are known by his name.

Whenever I observe any one engaged in studies I am amazed at the vast amount of time and energy that goes to waste because of a false method of work and the ignorance of the laws of the mind that may not be violated with impunity. When I estimate the time I myself have lost because I lacked sound methods based on certain elementary truths of psychology, I am grieved and quite understand the remark of Solomon Reinach who confesses in "Cults, Myths and Religions," that he ought to have learned in six or seven

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years what it took him thirty years to learn.

As I have said I was never advised by my numerous instructors on the art of working and I think that they themselves perhaps never gave the matter any thought. Habit is a heavy obstacle to progress because repeated errors cease to shock us. We do not even notice them after a while. As they had long been accustomed to the dull routine of our methods, and were diligent enough in following it, it doubtless never occurred to them that it might be made more interesting and easier. Even if the thought did suggest itself they were discouraged by the notion that such an innovation would be difficult and required a profound knowledge of psychology.

We must resolutely clear the decks for action, be honest with ourselves and not persuade ourselves that we are working when we are really wasting our time.

THE VALUE OF TIME

Wasting time is an irreparable fault. Time is as it were the substance of life. In youth the duration of a life-time seems very long. Alas, how soon it shortens; and one has a sense of the shortness of life as early

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as at thirty years. Chateaubriand tells us that on the day he realized he was forty years old he suffered a stupefying shock.

It would seem that because we measure time by clocks and watches it should be identical with all of us. But this is not the case. A day seems interminable to an indolent person, and very brief to a busy one. When they consider it as a whole it seems void and nonexistent to the indolent person and brimful to the busy one. The fact is that time is a frame which we fill with our thoughts, our feelings, our experiences. A very short life, such as that of a Pascal or a Spinoza, may be rich in product. A long useless life may be dull and bare as a desert.

The time for work is limited. If we deduct from a lifetime of sixty years childhood years and the time spent in sleep, do we have thirty years as the remainder? If we deduct from these thirty years the time devoted to dress, to our meals and digestive intervals, to diseases, indisposition, visits, travels, comings and goings, bootless griefs, periods of distress, endless gossip, correspondence, vacations, the vast amount of time out of which we are cheated by people who have nothing

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to do, what a terrible thing it is to realize that there remain for intellectual effort scarcely a dozen years!

Those who are engaged in an absorbing occupation rarely have any leisure and their life flows away unnoticed. The student is favored in that he is free. But let him make an inquiry into his best days. How few are the hours of veritable intellectual effort. Let him analyze one of these energetic hours. We can not employ our attention except by suspending respiration, so we must deduct from each minute the twenty-eight or thirty seconds required by the act of breathing. Add to this deduction the time required in searching in the dictionary, examining notes, pausing to read unnecessary things, the seconds used in dipping the pen into the ink, keeping an eye on the fire, our lamp, etc., and we are bound to admit that the time actually spent in effort is ridiculously small: twenty minutes in an hour in our periods of energy.

PROPER USE OF TIME

Nevertheless even in these short periods immense labors may be accomplished provided they are not squandered. Economy of

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time is the root principle of all success and all fame; but we must believe with our whole soul that nothing is equal to it as exchange of value. If we have deep respect for time and its immeasurable value, we shall always have sufficient leisure to do what we wish to do if we really wish to do it. Adolphe Blanqui wrote in the *Revue de Paris* (May 1, 1916) as follows: "Hard a worker as I have been I humbly confess that all during my life I have lost five-sixths of my time. With the remaining sixth I have succeeded in making brilliant studies, numerous travels, have followed for ten years the courses of the faculty of medicine, have become a member of the Institute and have written various volumes at intervals during my career."

Energy does not prolong life, but it increases our productiveness tenfold. "Life, if we know how to use it, is long." But ordinarily we move along without objective, always dreaming of new projects and we let the time slip by without storing up provisions against the day of need. We are like the grasshopper in the fable which sang all summer only to find itself without means of subsistence when winter came. The work

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that can be done by any one in fairly good health is very considerable, provided real effort is made.

Let me state as a principle that there is a difference between working well and working long. Mosso has shown that thirty successive energetic contractions of a muscle produce a depletion of force that requires two hours of rest. Fifteen contractions require only half an hour of consecutive rest. So by distributing our effort intelligently we can effect sixty contractions in two hours. Bacon noted the results of ill distributed effort when he said: "It is idling to spend too much time at studies." Time has nothing to do with the matter. The important fact is the energy we bring to bear on our effort. It is essential also that we do not delude ourselves and think we are working when we are engaged only in pseudo-effort, a kind of active indolence and resultless occupation.

ECONOMY OF MINUTES

This point understood, we must learn to economize our time as much as possible. The hours, as gold coins, easily take care of them-

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selves, but we must take care of the pennies, which are the minutes.

Great workers economize their hours. They do not sleep too much, do not eat so they feel heavy and dull after a repast, avoid visiting and idle correspondence and flee unprofitable conversation and everything that takes their mind off their work. Yet we may say that the greatest economy they effect is the economy of minutes. In a business that is not well managed the profits slip away in driblets because the losses of each moment mount up to an astonishing total. So also the squandering of minutes reaches an enormous total of hours.

We shall presently examine a prime cause of losses of time, which is effort that is left to chance direction. Now we confine ourselves to the wastage of minutes, actually during work. Persons in religious orders keep a watch on their thoughts and on the things they see because they know the Evil One is constantly on the alert to take advantage of a lapse in their concentration of thought. We may say that he hovers about the workers on constant watch. Cessation of effort is so easy for so many reasons. When we used

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quill pens what an amount of time was expended in putting them into shape. Every pretext is welcomed as an interruption. If a fly falls into an inkwell what a lot of time we spend in mending the matter. Töppfer gives an amusing instance of a scholar's pretext for interrupting his work. The cat is at the door of his study meowing to be let in. It would be cruel to leave it out in the cold hall and yet the scholar knows that the scratching of his pen on paper is taken by the cat as a form of amusement. Or, suppose we have to look up a word in the dictionary. We look not only at one but at half a dozen words which are near the only one we needed. If we look into a dictionary with illustrations we are tempted by the illustrations. The fire in the grate is low. There does not seem to be sufficient oil in the lamp. We hear a motor-car stop in the street and the engine keeps drumming in our ears. Who is coming to the house? Or, the daily newspaper is delivered. We decide to glance at the headlines of the news. It will take us only a few minutes. Then also how often our attention is distracted by the flow of associated ideas or reveries awakened by a certain word.

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Even the most earnest workers lose a vast number of minutes under pretexts that they hypocritically term plausible. We all deceive ourselves and tension of mind is so contrary to our nature that we deceive ourselves most ingeniously.

Just as a police officer never takes his eyes off a prisoner who is watching for any opportunity to escape so should we be vigilant lest our attention stray. The best way is to have reflected thoroughly on the matter so that attention is become a habit with us and we have always in mind this imperative self-command: "Watch the minutes! Have a care against minor distractions!"

There is always sufficient time for those that know how to make proper use of it and through self-discipline one reaches a stage of practise where never a minute is lost. Littré wrote the preface of his great dictionary in the morning during the time the maid was making up his room. The French Chancellor Aguesseau had a wife whose hour for dinner was never strictly determined. Instead of fretting himself over her lack of punctuality he wrote while waiting for dinner and would show her the fruits of his labor with the re-

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mark: "Behold my *hors d'œuvre!*" Regard for time was a distinctive trait of Charles Darwin. He never failed to utilize a spare few minutes under the pretext that it was hardly worth while to attempt to do any work.

It must not be thought that this careful employment of spare moments and of quarter hours is fatiguing, for it is not so much intellectual effort that is involved as indispensable minor duties such as copying, taking of notes, re-reading of certain passages, verification of texts, etc. This is a work of preparation comparable to that of a mechanic who puts his tools in order in his leisure hours. It is the useful employment of one's time when not actually engaged in work so that the mind does not stray too far from its main occupation. Soldiers expect from their leaders only such foresight as guarantees an attack surely against avoidable obstacles. So you should prepare yourself for the moment of actual work.

It must be remembered that the brain is always at work. Notice that woman across the street whose hands are fluttering all about her as she gesticulates. Her brain is

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stirring with excited feeling and thought. The intellectual person has a still more active brain. Associations of ideas, sensations, perceptions are continually moving across his brain as swiftly as in the brain of the excited woman in the street. Because of habit it is no effort to organize this rush of impressions into a harmonious train. We gradually come to the point where we not only can think consecutively of the subject in hand, but also where we create a certain partiality of mind that draws upon impressions and ideas relative to the dominant idea. This power of attraction becomes as that of the magnet which instinctively exerts its power on steel shavings and takes no note of wood shavings or scraps of paper.

This is a natural not a tensive condition of mind. We become accustomed to think by preference of a certain book or the chapter of a book we have kept in mind. A remark, a lecture, a word overheard all suggest ideas to our thought of preoccupation. So there is no wearisomeness about it. It is merely a mental habit, the reward of a slight power of will which costs us no more effort than is required of a mother to admire everything

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her child does and to be indifferent to what is done by a child of her neighbor. But this partiality of mind for the preferred objective is a necessity of the brain-worker because only constant thought on his work enables him to foresee obstacles and mobilize his resources for the moments of high pressure of energy when he sets his offensive in motion.

As time is only an empty frame in which we place our intellectual energy, it is evident that the most important matter is to administer this energy wisely.

VARIETIES OF ENERGY

It is necessary, therefore, that the student take accurate account of the quantity and quality of his energy so that it may be adapted to methods of work.

In the first class we find mighty power of will where energy renews itself rapidly and seemingly inexhaustibly. Such was the intellectual energy of Napoleon I, of Alexander Dumas the elder and others. There are certain persons of vigorous energy whose forces are but slowly revived. Such a one was Pascal. There are those whose energy revives with moderate promptness or delay.

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In the lowest order are those whose energy is quickly expended and only slowly recovered.

This classification, made for proper guidance in the use of each one's individual energy, is only of general value, for the energetic forces of most people undergo great fluctuation. The moments of full vigor, of intellectual lucidity and searching penetration are rare compared to the moments of moderate or feeble power. In one day or in one hour the changes in a person's energy may be considerable.

Prudence consists in never losing a single one of the sacred moments in which the intelligence is at full tide. It consists also in being worthy of such moments by being prepared to make use of them. This is done by adroit employment of the countless minutes of energy we have so that when the great hour comes we are all in readiness. We are lacking in nothing to profit by it. We can not be distracted, halted or turned from our objective.

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KNOWING ONE'S CAPACITY

The learner must see himself as he is, be free from presumption, and avoid over-estimation of his forces or depreciation of them. He must estimate them at their just worth so that he does not require of himself more than he can really compass. But he must require of himself every effort of which he is capable.

Is he endowed with energy that is abundant and speedily renewed? Then he may, without fatigue, spend a half hour in intensive effort, to be followed by a short period of rest. He may continue after this with an effort of equal or less duration, to be followed by a rest period of greater extent. And so he may go on for two or three hours.

But in the case of a person whose energy is slow of restoration the effort periods should be reduced and the rest periods lengthened. Each one must study himself attentively, as he would study his fellow in a purely objective manner, just as on a farm one evaluates the working capacity of a man or a horse. To be intelligent in this matter is to see oneself as one is and to accept the

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verdict. We must take our natural allotment of quality and quantity of energy and utilize it wisely. Nothing is gained by straining. We are what we are and we must make ourselves yield the best that is in us.

By wise management we may accomplish much even if our energy is only moderate, because one of the essential elements of success is time, which is an identical possession of us all. The prudent use of this common power produces the finest developments of human effort.

FORETHOUGHT ON WHAT IS TO BE DONE

Because our energy is limited we must never squander it. Avoid unnecessary fatigue. A great deal of force is consumed, it seems, in matters requiring decision, resolve or initiative implying a choice. People of feeble will, it is well known, are troubled and hesitant when they have to make a choice between two simple alternatives. If you trace a line on the ground and from one end of it draw two divergent lines and ask a person of weak will to chose whether he will advance to the right or left along one of these divergent lines he will be incapable of exer-

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cising the will-power necessary to make a choice. I have often remarked the difficulty some people evince in choosing a chair as they enter a reception room. We are all weak-willed in various degrees as some servants and workmen are who move straight ahead when they are told exactly what to do, but who are powerless when required to choose from among several alternatives. Monks and soldiers have a hard life, but it is free from responsibility and initiative; and persons of feeble will-power find much comfort in not being obliged to decide for themselves. As in all the varieties of energy there are high and low periods, it is prudent when about to draw upon our forces to avoid burdening the will with doubt about a choice between alternatives.

I have frequently observed students about to set to work and have noticed that they lose much time in deciding on the subject they will take up. When they do decide and begin to study, it is with reduced energy, the result of their hesitation. I myself have always made it a rule to decide beforehand on what I would do, so that when I sit at my desk I begin work at once. Otherwise I would not

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get to work until after some time had elapsed in indecision and my effort would not be so rapid and energetic.

This is easy to understand. We know by exact experience that to imagine a certain act is possible only through the nervous excitation implied in the performance of this act. A more intense excitation of the nerves increases the speed of performance in such an act. To think of performing it is to a degree the preparation of performance. We get ready and that is the beginning of action itself.

This is why the will is easily set free when the action required is simple and clear, and why the working of the will is difficult when there is a confusion or a complexity of project. The truth of this statement is proved by the fact that any certain action really accomplishes itself when we imagine beforehand the precise procedure to be effected. I have often remarked that if I wish to rise very early in the morning, thoughts of abstract duty or of personal honor are of small use to me. These abstract reasons have no effect on my muscles. But if, on the other hand, I fix my attention on the various muscu-

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lar movements I must make in order to get up the result is very different. If in thought I pick up one piece of my attire and then another, and if I visualize my movements in their habitual automatic order and I concentrate my mental force on each detail of such action, it naturally passes into the action itself, and I find myself up and in process of dressing. In other words, I have crossed the Rubicon which separates the impotent wish to do a thing from the actual doing of it.

Similarly I have remarked a hundred times that if I undertake to do something without having prefigured in detail what I am about to do I find it very difficult to get under way. But, on the contrary, if I consider beforehand that this morning I am to study a page or so of Seneca's, that I shall as a preliminary take my dictionary and grammar in hand and then read my appointed text correctly, phrase by phrase, my work is greatly lightened and expedited. . . . By recognizing in advance the details of an act to be performed we avoid at the very beginning of any work a preliminary fatigue—the fatigue of having to choose between various possible approaches to performance. This fatigue of

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choice is so real that we lose considerable time in the mere preparation to do what we wish and have to do. Every little detail is a cause of delay. We examine the ink-well, our pen and occupy our mind with whatsoever trifle keeps off the moment of decision. It is very imprudent to permit this superadded effort to interfere with the business of getting at actual performance.

Therefore we must aim to escape the delay inherent to choice in the performance of an action which is easy when it has been thought out beforehand. Toward this end we should give thought this evening to the work we are to do to-morrow, just as musicians tune their instruments before beginning to play at a concert. But we must not be satisfied with slack preparation for our work. We must prefigure it in all its intricate and precise detail. If we practise such a circumspect method of approach to anything we undertake, we shall enter upon the task with ease and decisiveness of mind.

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SELECTING THE METHOD OF ACTION

Under this head we might reiterate what we have said of method in general. In brain-work as in all effort we may realize an important economy of time and energy by previous reflection on the manner in which any appointed work is to be performed. Thus one avoids "the daily waste of human effort through awkwardness, misdirection or incapacity. We learn readily to gage waste of material, but we appraise less easily that which results from the incompetency or unfitness of people." We know nothing except through learning it, not even to walk without wasting our strength, as Mosso points out in his "Physical Exercise and Intellectual Development." We should be executives of our brains. We may find the sum of 8 in various ways—by adding $5 + 3$ or $4 + 4$, and so on. So also there are divers ways of performing any task and it is wise to have considered them. We must never attack a task impulsively with the result that we are quite ready to drop it when we are in full course because we find we have approached it from the wrong angle. If I begin to write a chap-

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ter in one of my books I never set out before I have planned that chapter. Often as I proceed I discover miscalculations in my plan which necessitate an entirely different beginning. This is unavoidable because only the actual working out of a plan discloses the imperfections of the preconceived ordering of our material. Therefore we must know what we want to do and have in hand all memoranda, note-books, clippings and published works necessary to our work, so that all the effort of our writing is free from pernicious interruptions that will overwhelm us if we must always be pausing to find some needed material.

VIGOR IN BEGINNING AN EFFORT

Once we have looked ahead and have seen all there is to be done, we must get to work. We must set out unafraid and vigorously and throw ourselves heart and soul into the effort. "We must enter upon our task with confidence and daring," meeting obstacles with undismayed resolution and the sureness of a good swimmer who knows that the waves which would seem to engulf him only bear him on their bosom.

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It has happened to me many times that I remained for week after week opprest by a multitude of ideas for a specific work and yet was unable to put them into organized form. In the case of my "Course in Morals," for instance, I suddenly perceived the inanity of my provisional plan of the book and in consequence was bogged for a long time in darkness and confusion. But, because of what I had learned through previous experiences, I held on to a calm feeling of certainty within myself that eventually light would dawn upon my mood of darkness and confusion. The light really did dawn and suddenly through a sharp synthetic arrangement of my multitude of confused ideas.

No resolute effort, loyal in idea, free from chicanery and impatience, ever ends in complete failure. As our admirable Poussin has said, "with time and straw the medlars become ripe." By maturity he meant, as Desjardins tells us in "Methods of the Classics," the discovery of the significant matter in his subject. Only we must devote ourselves body and soul to our work. As I have said in my "Apprenticeship to the Art of Writing," let us follow the plan of Joan of Arc, who re-

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lates: "I said to my men: 'Let us venture boldly upon the English!' And I went first!" When you have a problem to solve, attack it boldly.

From indoors a rainstorm may seem much heavier than it is found to be if one resolutely goes outdoors. Indolent persons conceive an exaggerated notion of difficulties. They are like a timid man walking along a country road at night. Each clump in the hedge seems to hold a highwayman in ambush. To the courageous walker a clump of shrubbery is only shrubbery. Similarly difficulties of work cease to exist in the observation of courageous workers. Their calm strength outfaces difficulties.

Yet even if we are lacking in confidence at the outset of our effort, confidence—which is a compensation in itself—will come to us provided that in the depths of our mind we are not defeatists and so allow ourselves to be undone by the hypocritical apology of discouragement. We must throw every ounce of will-power into our effort, and then faith and confidence will be our portion.

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CERTAIN COUNSELS

One thing we must remember and that is never to wait till we are "in the mood" in order to begin our work. The same rule applies to work as to climbing in the Alps. One fares forth before daylight amid the icy airs of the upper valleys and the first moments after departure are distressing to the half-awakened man. But as soon as the heart is thoroughly aroused and the blood is oxygenated, courage and eagerness begin to glow throughout the system. So we must never expect the impulse to action from outside ourselves. It is the compensation of our initial efforts. Action produces happiness and movement of mind. As Gratry says in "Sources," in order to write we must first take our pen in hand to write or we shall never write. We must begin somehow in order to get ourselves started, even if we have to reject what was written in this preliminary striving.

Once we are under way we must work "faithfully, conscientiously, perseveringly," as Nicole says in his "Essays." By fidelity is meant order—that is, working always at

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the same hours. Conscientiousness in work means working with all energy to the best of our ability. Perseverance means continuity of effort on the same task. We must avoid inconstancy.

We must never become hurried and nervous, especially when we have much to do. We must avoid overwork, worry, haste. Haste always partakes of the feverish. Our heart beats too fast as we work and anxiety spurs us so that our mental equilibrium is disturbed. It loses the steady calm which alone permits the fine and copious association of ideas. Haste disturbs the critical spirit, which is clouded in turbulent and impulsive minds. In his "Autobiography" Herbert Spencer points out that Sir John Lubbock, for all his numerous and varied occupations, never seemed to be in a hurry. He was always calm and apparently at leisure. We receive the same impression from experienced equilibrists, who at the most perilous moment of their performance are calm and in perfect control of their muscles. On the other hand, beginners in the acrobatic calling are agitated and given to useless motions that only dissipate their energy. We

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must be tranquil, make haste slowly, not try to do everything at one stroke—in a word, we must work "with an ease comparable to the flowing of oil which is noiseless." Truth is the gain of patience and devotion rather than of genius. When I am harried and nervous I pay special attention to the mere act of writing, the spelling of words, punctuation and other details because the exercise of the attention on these minute matters induces a calm in my mind.

ONE THING AT A TIME

It is to be noted, furthermore, that we can induce calm and ease of mind only if we confine our work to one thing at a time. The great secret of learning, Locke tells us, is to learn a little at a time and to "make haste slowly." DeWitt, a great Dutch statesman, who was killed in 1672, directed all the affairs of the Dutch Republic. Yet he always had time enough to attend dinners and social gatherings in the evening. Once he was asked how he managed to accomplish so much state business and still find time for social diversion. His answer to this question is recorded in "Lord Chesterfield's Letters to

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His Son," and reads as follows: "There is nothing easier, if one does only one thing at a time and one never puts off till to-morrow what can be done to-day." Do what you are doing, and do it deliberately without feverishness of mood or supersensitive nicety. As Sadi, the great Persian poet, said to the Arab fabulist Lokman, let us be counselled by the method of the blind, who never put down a foot until they are sure there is solid substance to put it on. The child who feels his way about in the new world all around him indefatigably recommences a voyage of discovery each time he meets with an unfamiliar object. He touches it inquiringly, lifts it to judge of its weight, bites it, looks at it searchingly, listens to hear the sound it gives when tapped against another object, and does not end his examination until he has completely satisfied his tests and made full acquaintance with this novelty.

On another occasion I have cited the French statesman, Roederer, who said of Napoleon: "There was never a man who concentrated so completely on the work in hand, or who distributed his time so skilfully amid the many things he had to do. No man

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ever was so inflexible in his refusal to engage in thought or action that was not required of the day and the hour. Nor was there ever a man more ardent in his appetite for such thought and such action or quicker in pursuit of its accomplishment when the proper moment had arrived." The Abbé Pradt, Napoleon's Almoner, tells us in his "History of the Embassy," that "when Napoleon was occupied with any particular business, nothing else existed for him. To him it was a matter of pursuit from which nothing or no one could turn him aside."

At the outset of my administrative career I was overwhelmed by the mass of communications I received regularly. I would cast a glance over the whole lot, then look at one and another without making a decision on any. I soon saw that by such a practise I was losing a great deal of time and this discovery began to prey on my nerves. Presently my poise reasserted itself and I began to save time from the day I resolved to open one enclosure after another and to reach a decision in like order. I did not take up a second communication until I had settled

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upon an answer for the first or marked it as a subject for inquiry.

This was a reversion to the sound method of Descartes, who "divided all difficulties he met in his researches into as many units as he could and which would be taken up again in turn to help solve his problem." So also Horatius, the adroit Roman warrior, took care not to attack the three Curiaci at once. He fought and bested them one after another.

This rule of doing only one thing at a time and of doing that one thing with all one's soul is of capital importance in intellectual effort. By nature we are impulsive, unstable, scattering. The vibrant complexity of life in cities tends to augment this agitated state of mind. We want to do everything at once and we move too fast. Now, the great achievements of humanity have been wrought through calm and patience, which form as it were the definition of power. "But," it will be objected, "if we are calm, how can we get ahead?"

Of what use is it to get ahead, when it is a certainty that our enemy, forgetfulness, will wrest away from us the ground we have

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gained? It is an absolute necessity that we make sure of our position step by step as we advance. It must be strengthened, organized, in a word put into such shape that it is invincible.

What is more, it is not true that if we do only one thing at a time and do that thoroughly we are not making progress. On the contrary this is the one and only way of sure progress. It will be recalled that I have previously spoken of Alpine climbing and said that those who reach the top of a peak do so by slow and steady steps. Those who think they can hurry to the top are soon halted for want of breath and must remain by the way.

DOING ALL THINGS WELL

Let us therefore work calmly and give to each detail of our work the best that is in us. Time is always an asset in possession of the person who works. If each day we sow a certain part of our field of labor we shall reap a rich harvest at the end of the year. Confucius says: "If there are some who study and draw no benefit from their effort, let them be neither discouraged nor stopt

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from studying. . . . What others may achieve at one attempt, they will achieve in ten; what others may achieve in a hundred attempts they will achieve in a thousand. Whoever follows this rule of perseverance conscientiously must necessarily become of enlightened mind, no matter how ignorant he may be."

From the lives of great men we learn that they all succeeded in their aims by perseverance and by the will-power they had to concentrate their entire attention on one fact after another in their pursuits and by leaving nothing undone. When Faraday was interrogated on the secret of his great productive capacity he explained it in three words: "Work, completion of work, publication." In the case also of the saints a pitch of high heroism was reached through their performance, with unvarying devotion, of the simplest acts that constitute the warp and woof of every-day life.

We must perform all the small details that go to make up a complete accomplishment with scrupulous conscientiousness, with care, with fervor, with courage. We shall be surprized then to see how rapidly we progress

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and what constant new accessions of energy we gain by these continual little successes of will-power. We must never be satisfied with work ill done—for that is not work, it is worse than nothing.

IMAGINARY FATIGUE

The point has been reached where a profounder analysis may be made of what goes on in our consciousness during a work "offensive." I have merely touched on this matter, it will be recalled, on page 19. We all know that on certain days our energy is at high tension, while on others it is at low tension. In other words, we are not "in the mood" for work. Neurasthenic people suffer from a constant sensation of fatigue, and we are all neurasthenic at times. I have known neurasthenic types who felt incapable of taking even a short walk in the mountains. Yet when they ventured out and found that the inn at which they expected to spend the night was no longer open, they proved themselves equal to walking for fifteen hours. Some women who complain all day of being tired will dance through a whole evening without the slightest sign of fatigue.

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How are such facts to be explained? The truth is that the sensation of fatigue, as also the sensation of hunger, is often imaginary. If we pay close attention to the sensation of imaginary fatigue we shall find that the mite of reality of which it consists becomes a center of organization that increases in force as it is allowed to abide with us. Gradually it dominates our mind and paralyzes our will. We may cite the fable of the wood-chopper who believed himself too utterly tired to walk another step. But when danger threatened he quickly took up his bundle of faggots and proceeded on his way. We must act likewise when pseudo-fatigue threatens us in our work.

The experience of pseudo-fatigue is clearly noted in mountain climbing. A party of climbers are making their way up a rocky mountain side. Overhead the broiling sun is beating down on the close, narrow and monotonous gorge. Every one is at the point of exhaustion because there is nothing to distract the mind from the sensation of fatigue. At last comes what seems to be the moment of a general surrender to this sensation of fatigue. Suddenly the climbers arrive at a

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sharp slope. A new horizon opens on a splendid succession of valleys, peaks and glaciers. The climbers now have to restrain the will-power and driving force that sent them upward, for slopes are dizzy of descent. At once the sensation of fatigue vanishes because one ceases to study it through the magnifying glass of the attention.

This sensation of fatigue was merely a suggestive sensation. It was a fantom, a creation of the imagination. It had no more real substance than have the castles we build in fantasy when gazing at the brilliant flames of an open fire, or the strange animals whose shapes children can trace in the clouds. Often we are subject to troublesome physical sensations. Our digestion may be disturbed; certain muscles may be wearied; our circulation may be irregular or we may be suffering from some respiratory inconvenience. If we fix our attention on these admitted disturbances we can conjure an impression of fatigue and even of exhaustion because we have a *visceral imagination* as fertile in invention as that of the mind.

We must not be stopt by imaginary sensations of fatigue. The indolent and the neu-

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rasthenic are frequently partly unbalanced persons who mistake illusion for truth. We are not really tired unless the sensation of fatigue persists after we have done something. Then only must we come to a pause.

If we thrust these fantoms aside or, rather, if we refuse to permit them to be built up from certain torpid physical suggestions, and if we deny them our attention, they will vanish, routed before our contemptuous disdain. They will not attempt to reassert themselves except after we have worked long and hard, and mental suggestion, combined with the physical protest of our body, too long inactive, has acquired a high intensity.

DRAWING ON THE DEEP RESERVES OF ENERGY

But if we repel them once more, they again disappear. Through such resistance the courageous worker makes an important discovery. This is, that we have rich reserves of energy, that are seemingly dormant, but which when aroused enable us to accomplish miracles of effort. Nearly always we are fixt at a point below our highest capacity of effort; and almost all of us have acquired the indolent and pernicious habit of yielding to

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the hallucination of fatigue once this point of our capacity looms in view. We seem to be unwilling to realize that we possess reserves of energy much richer than the supply we are content to use. Thus it happened in the tragic shipwreck of the *Titanic* that many succumbed to the cold and fatigue. Many were saved chiefly through the energy they could command in their grim fight to live. During the war countless cases occurred which prove my point. . . .

We should say to ourselves that the feeling of weakness, of fatigue, of powerlessness, of the impossibility of doing a thing, is only a form of neurasthenia. There is but one efficacious treatment for this mental illness; and that is, that the sick person acquire, through acts of will-power, a knowledge of his actual energy. Every exercise of will-power, however small, is tonic in effect. To rise and consult the atlas for the location of a place mentioned on the page one is reading is such an act, to verify the meaning of a word by reference to the dictionary, and a thousand other minor acts day by day strengthen the will so that little by little we become masters of ourselves and also little by little we gain confi-

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dence in our energy. We must never agree to an underestimation of our capacity for work. People who live confined lives of languor and depression, breathe only with part of their lungs. The part of the lungs that is not called into use becomes flat and shrunken; but energetic exercise fills out these shrunken portions of the lungs and fills them with life's breath. So also an anemic will engages only a small portion of the energy of the mind. The remaining portion shrinks. Therefore we must always work with full command of our forces and not be too attentive to the impositions of our indocile and slothful physical frame, with its suggestions of shirking and delay. Above all, we must shun condonation of the spirit of indolence, which is both ingenious and subtle. Indolent people love to prate about the terrible consequences of overwork.

ILLUSORY EXHAUSTION

We do not believe in real exhaustion from overwork, for the simple reason that work is impossible when one is fatigued. Overwork, as it is called, results from dead and inert effort, which for hours leaves the body

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stagnant in the vitiated or stifling atmosphere of a study or an office. Real work is far from being the cause of fatigue in these unhealthy hygienic conditions, for they permit only of effort that is languid and half-alive. I can offer in instance the fact that on entering study halls in our educational institutions in the midst of an evening session I am always choked with the bad air of the place. The same experience is recorded of many business offices, where the employees work with badly oxygenated blood in a temperature and air suitable for the hatching of silkworms.

Another cause of exhaustion which can not be excessively condemned is traceable to the ruinously vicious habit of too sedentary and moping a life. One hates to think of the hopeless wrecks who waste all their energy in idly sitting and dreaming. Especially is this true in the growing years, and the practise leaves the adolescent in a state of least resistance.

A third, and a very important cause of exhaustion is depressing thought. If we are preparing for an examination in any subject, what disquiet, what feverish haste we suffer,

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Then, moreover, there is the exhaustion of working under superiors of captious mind who have no eye except to find fault. It is the blemish of many of our administrative departments that the heads of them have a purely police notion of their functions. Instead of considering their subordinates, even the most conscientious, as co-workers to be resolutely upheld, they seek only to pick flaws in them and set them down—and of course to the detriment of the service. According to Dr. Charles Burlureaux in his "Treatise on Practical Psychotherapy," many illnesses may be traced to this source.

Those who work through pride, through vanity, and are devoured by hate and envy, are deprived of the joys that sustain those who are faithful to the truth. Disappointments, failures, shocks to self-esteem are often the cause of exhaustion, but this exhaustion can not be charged against work. As I have said in my "Course in Morals" they spring from the mediocrity of a soul intoxicated by false sentiment.

Often I have asked young people, who complained of exhaustion, to let me see the work they had done and I have always found, as I

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have found in examining my own labors when I felt fatigued, that their work was limited in quantity and poor in quality. The sensation they undergo is one that makes any further effort seem impossible; and it is often accompanied by a feeling of general powerlessness, which vanishes if one keeps on perseveringly. It may even happen that we feel a certain concern, which, when analysed, seems to proceed from some disturbance of the stomach or of the circulatory system. And so we come to the point of discovery that there is no intellectual exhaustion, but a physical one. In my own case I have found that all these obstacles, which twist themselves into a general feeling of inability to work, disappear if I take a short walk in the open air. This proves that the difficulty lies in the irregular operation of our physical machinery.

To sum up, it may be said that the brain is a high potentate incapable of exhaustion. If we consider a person who is dying of starvation, we find that it attacks the fatty and muscular substances in the body in the diminishing order of their importance. When death comes, the brain is found to be

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of the same weight as in life. So therefore the brain is not an organ which permits itself to be exhausted. The organ which mostly exhausts itself is the stomach; and this is a very serious matter, for when the stomach is worn out all the other organs are endangered.

ONLY SHORT WORK PERIODS NECESSARY

A rule to which there are few exceptions is this: Five hours are enough for steady work. Carlyle, who was a very hard worker, refers often to this time limit as the maximum. In a letter to his wife, Jane Welsh Carlyle, he wrote: "I do not believe that any man of letters ever gave the fifth part of his time or of his attention to literature. Think of what one could accomplish in forty years of work on this basis, if the time were well employed." The fifth part of twenty-four hours, it should be remembered, is less than five hours. "Devote only four hours a day to serious effort," he wrote on another occasion, "in a spirit of faithful, inflexible, single-minded devotion—and your success will greatly exceed your expectations." My personal conviction is that few famous authors

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attain to this daily total of working hours. But we must not, on the other hand, attempt to exceed it. By working three hours a day we may produce an enormous output. Zola never worked more than three hours a day. It is of himself that he is talking when he sets down the following in his novel entitled "Work." "He was never able to give more time to the task. His only assets were his will-power, his tenacity, the inspiration of the work in hand, to which he gave himself with all the intrepidity of his mind. . . . He aimed always at the same objective, undiscouraged, unwearied, sustained by the enduring and aggressive faith that lifts mountains. How shall we gauge the vast heap of production that we can pile up if we work only two hours a day with decisiveness." Coleridge believed that three hours of work each day was adequate for the production of great works in literature. The famous painter, Harpignies, required of himself three hours of regular work, and then took his way into the fields to make sketches. In *Praeterita,* John Ruskin goes so far as to recommend six hours of work daily.

But it is to be noted that excessive appli-

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cation tends to blur the visual faculties, not only in the physical, but also in the figurative sense, because it destroys the freshness and originality of the sense of impression. More important still, excessive application destroys health, which is the source of energy. American life, which tends to monomania in work, is preposterous. It is better to work in tranquil activity throughout a long life than to overwork oneself through the course of a few years.

In his book "America at Work," Sir John Foster Fraser relates that he visited a great business organization in Philadelphia, which was famed for its enormous speed and capacity of output. He asked the head of the establishment the following question: "What becomes of your older men? I have not seen a single grey-head in the whole place. Where are your veteran workers?" The American manufacturer made no reply, but when Sir John Foster Fraser insisted on having an answer, he tendered his open cigar-case and said: "Have a cigar, and while we're smoking, we'll go out and visit the cemetery."

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HOW TO LIMIT ONE'S EFFORT

We must use the force allotted to us with reasonableness—and by that I mean we must never do anything that impoverishes ever so slightly our capacity of energy for the morrow. Moreover, as we work productively only when we work happily, we must above all things take care of our health and work only so many hours as our health permits. This number of hours varies according to the nature and amount of one's energy. How, then, are we to know whether we do or do not exceed our limit of energy. Judging from my own experience the one and only dependable index is the repercussion of our effort during the hours of sleep. If after a day's work our sleep is restful and restorative, then our work has not eaten in upon our capital of energy, but has only expended that sum of it duly provided for such purpose each day by nourishment and rest. But if, on the other hand, our sleep is fretful and does not sufficiently serve to restore our strength completely, this is proof that we have exceeded the day's limit of energy for working. We have drawn upon our capital and must re-

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place what we have drawn upon by adequate rest. As I have said, the nature of our sleep is the infallible index of the limit of working hours, and I myself have never ventured to consider disturbed sleep as less than a warning. It is just as important a warning as is the alarm whistle that startles the engineer when his boiler is near explosion.

To be sure, nervous exhaustion may result from intemperance in other matters than work. An over-abundant dinner may cause a night of fitful sleeping; but in the life of one who is regular and moderate in habits it is very easy to ascertain the exact causes of disturbed sleep.

PROPER DISPOSAL OF ENERGY

As the amount of our energy is limited we must administer its distribution thriftily. A young man who aims to accomplish some great work must know how to conserve his energy against all attractions that may tempt him to scatter and waste it. He must choose whether he will be a mediocrity and live an easy and insignificant life, or whether he will accomplish the work that is the goal of his desire. He must thrust aside all temptations

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to dissipate his energy and it is to be remembered they are without number. I mention, for instance, long idling away of hours among friends, the theaters, dinners, political and social gatherings, in particular, profitless reading, and all that is included in Emerson's term "inferior duties."

Yet I do not counsel any one to flee from the world and take refuge in a desert, tho it is not to be denied that solitude is the great source of inspiration. If all the heroes of human thought came into being in poverty, it is not because poverty itself possesses any miraculous productive power, but because nothing so thoroughly isolates one as poverty. Because of the limits imposed by want of this and that comfort and convenience in poverty, the mind is held within barriers that protect it against the distractions of worldly contacts and amusements. Poverty helps young people to concentrate.

Am I proposing a repellently austere ideal of living? By no means. All I urge is that we avoid wastage and scattering of effort. All that tends to proper relaxation after our work is done is commendable; but all pleasures that exhaust instead of adding to

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our energy are to be shunned. Grossness in eating or drinking, long evenings spent in a close atmosphere, and all sexual excesses, which are ruinous to the brain, are to be avoided. I may interpose that such pleasures of the senses as I have enumerated seem so base compared to the deep-drawn exhilaration experienced by those who do creative work, that it is no more difficult for them to renounce the baser enjoyments than it is for a grown-up girl to stop playing with dolls.

THE TIME FOR WORK IS SHORT

Nevertheless, it must be remembered, that we have learned of the necessity for moderation in work. If people tell you they work ten or fifteen hours a day ask them to show the results of their effort. You will discover that, as in the case of so many office-holders, their time is spent in handling innumerable insignificant trifles and that the sum of real accomplishment is very small. What they call work is only too often inaction laboriously occupied.

As the duration of energetic effort is limited, the intelligent worker will go about his task as railroad men arrange for the

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passage of a fast express, namely, by clearing the track of all obstacles. He will take measures to clear all obstacles out of the way of his achievement so that the precious moments of his creative inspiration are not dissipated by mischievous and wasteful distractions.

A tentative schedule of the small number of hours needed for intellectual work may be set down as follows: For those of abundant energy, four or five hours per day; for those of energetic force estimated below the average, two or three hours per day; for those of ordinary energetic force, one or two hours per day. It is for each of us to study himself honestly and without conceit in order to be able to appraise the duration of the periods of real energy. Then we must organize our life so that everything is coordinated with and subject to the time of our full intellectual power.

On the point of the duration period of maximum energy, let us consider how many hours are lost perforce through ill health, occasions of mourning, family celebrations and a thousand other inevitable distractions of social life. We shall be amazed at the small proportion of time the greatest workers have

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given to their tasks. It should be an encouraging thought to young persons that they may become one of the lights of their generation by working only a limited number of hours, provided they work during these hours with all the energy at their command.

PREPAREDNESS FOR WORK

Work is impossible if one is not prepared to work. Thus, before I wrote this chapter, I had to read thousands and thousands of pages, take note in my reading of all that pertained to my work, question authors on their methods of work, reflect on my own experience as a writer, compare my researches with my experience, in order to sift out the errors and deceits of the vain, either of those who wish to astonish one or of those who are incapable of correct observation. Then came the need of classifying my discoveries in such order that the mass result would be an aid and not an encumbrance to me. But the greater proportion of reading and research is not work but a kind of clerical task. Say for example, I read the 800 pages of Carlyle's "Letters to Jane Welsh Carlyle." I mark with a pencil such passages as bear on my

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subject, then re-read these passages and select from them happy expressions and profound reflections, and finally classify these notes in intelligent array. All this is a clerical effort that is easily accomplished and might in case of necessity be entrusted to a secretary.

But this so-called clerical effort must be performed. It were absurd to attempt to write on any subject without having acquaintance with the thoughts on such a subject of great minds in all ages. Such a venture would be characterized as an unheard of presumption by all who realize to what a great degree the discovery of truth is the result of collective effort. But once we are prepared on our subject and have studied it from all angles, we must thenceforth think for ourselves with a confidence in ourselves that is sound and resolute. Thus we see that the essential fact in the method of mental effort as in the art of war is preparedness in everything. Men are clothed, fed and armed. Pending an attack enemy positions are bombarded with shells; and at the appointed moment, with no further thought of the consequences of the action, our forces must go

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forward in furious determination, without losing a minute, cost what it may, and with not a glance behind.

ACTUAL AND FANCIED PREPARATION

The preparations we make for work, such as various reading, researches, notes and the classification of them can be accomplished at slight expense of energy. It follows therefore that we may give up too much time to this function. Nietzsche estimates that the average philologist consults about 200 volumes a day. Naturally this unfortunate person loses all capacity to think for himself. Weak and aimless toilers confuse such indolent sort of effort with real work. They imagine that in gathering a multitude of notes they are working. They are not working, but idling in fancied preparation. Such effort is so far from being real work that the facts they collect, out of which so many books are compounded, are wholly useless, because the majority of their facts have no value. Claude Bernard has told us that an observation worthy of the name is always the answer to a question, which is either stated or forthcoming. Only significant facts are of im-

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portance; and the only facts that are significant or have meaning are those which make reply to some question. A fact shows us no new light unless it is illumined with a thought. If a fact be not an organic element of a thought it is of no purpose. Piled up with a lot of similar facts it helps to form a heap of useless lumber. For various reasons I do not seek my "facts" in works of secondary standing. First of all, because as I have said they are not properly presented. Like diamonds facts must be cut and polished so that they diffuse the glow of thought and this process demands the skill of finely tempered judgment, which is far from being an ordinary quality. Only fine steel will take a fine temper, because if the metal be not cleansed of all dross, by which I mean to say, if the judgment be not purified of passion and feeling, it will very easily become partizan. Minds of mediocre quality are incapable of this purity of judgment, for in them ideas are alloyed with vanity, rancor and prejudice.

Thus, by way of instance, I may mention that in the sciences Cuvier, whose mind was dazzled with pride consequent upon the

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honors he had received, was incapable of understanding the grandeur of the conceptions of Geoffroy Saint-Hilaire. Often it happens that a great man will decline from his high mental stature at the end of his career. Napoleon is another example of this phenomenon, for he was defeated at Waterloo by accepting battle when he ought to have retreated, as Joffre, unblinded by pride, would have done.

Another reason why we should not seek our facts among mediocre authorities is that with the instinctive curiosity of collectors of oddities they seize upon picturesque facts. These are quite plain to be seen, but generally are of no influential weight. On the contrary, essential facts, causes of long series of consequences, do not thrust themselves on our sight. Only the penetrative eye of the great mind can discern them.

Thus, for example, you will seek in vain among historians for the cause of the decadence of the Roman Empire and of the process through which it fell without an invention to show in arms, in tactics, in literature, in the arts, in medicine, in the sciences. This is because progress is achieved only by

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resourceful and energetic men. In the conflicts and bloody proscriptions of the Gracchi, of Marius, Cinna, Scylla, Caesar and Pompey, of the Triumvirs and Octavius, all the worthy and courageous men of character had been killed off.

I never found a plausible explanation of the European invasion by the barbarian hordes until I read in the works of Kropotkin about the progressive drying-up of the earth; a process already completed in the section of Asia which the barbarians were forced to abandon.

Only minds of high value can recognize facts of high value. Ordinary minds accumulate enormous quantities of facts of no importance. Important facts are not numerous and one of the ordeals of the scholarly man is that he must spend so much time in searching the productions of pseudo-effort, whether books or reviews, for a few ounces of the real gold of well-founded observation and profound interpretation. . . . It is as with the gold-seekers in the torrents of the Alps who wash tons of sand to secure a small amount of the precious metal. In such occupation countless hours are spent delving in productions of

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pseudo-effort by dull and laborious learned men who can not tell the true from the false.

THE SACRED HOURS

We must not delude ourselves and must keep ever clear and sharply defined the capital distinction between pseudo-effort and the pure energy of real effort. Let us learn to organize our life so that everything is subordinated to the work in hand during the several hours of intense intellectual energy.

To have a clear understanding of this reality simplifies all other questions. It is enough if we never lose an instant of our propitious moments when the mind is at its clearest and most vigorous. The problem whether it is better to work in the morning or in the evening is of no importance. He who wishes to learn, provided he can choose his own time, will select for his work the interval when his bodily energy is habitually less sluggish, for example, from nine A.M. till noon or from four till seven P.M. Whoever is occupied during the day will, if he is wise, place his store of sacred hours very early in the morning. In his "Introduction to the Devout Life" St. Francis de Sales recom-

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mends the early morning as the most fruitful and most precious time. It is the most agreeable period, the calmest and the least subject to interruption. The very birds, he says, seem to invite one to labor.

Some physicians are of the same opinion as Saint Francis on this point. But persons of neurasthenic disposition feel a sense of fatigue in the morning. This is a distressing hallucination, which can be banished by sincere endeavor. I have always found it serviceable to fix my three sacred hours before the incursion of my professional obligations in each day's round of duties. Incidentally I note the curious fact that I rise very early in winter with greater ease than in summer, because in winter the silence and my sleep are more profound.

But we must not fix any inalterable working periods at the same hours for all seasons, because no will-power is strong enough to conform to such a system unchangingly. The essential thing is to place the sacred hours in each day at the most suitable interval, when all the circumstances of our regular course of life converge to our aim. It is not the habit of a particular time that we must acquire, but

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the habit of a particular effort. The only actually bad habit is that of working at night, when the blood is laden with absorbed toxins which are eliminated during sleep.

We must bring to our work a free and willing devotion, not the forced effort of a convict toiler. Even if we essay a great undertaking, we must not brutalize ourselves, but must treat ourselves humanely and generously.

Once we are fully resolved to devote ourselves with heart and soul to a certain work for two, three or four hours, the thing of chief importance is to yield ourselves entirely to such effort at the properly selected moment. Attendant and incidental matters are easily disposed of at any time.

Often when I have slept well I do my special work from five to eight in the morning. I have no fixt rule for such procedure, for often work from nine till noon, or from five to seven in the evening, is just as good as that done very early in the morning. The difficulty during these later hours is to guard oneself from interruptions.

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IMPORTANCE OF HEALTH

Among other things, we must not forget that, as Herbert Spencer says in his "Autobiography," the mind is seated as deep as the viscera. Consequently the first preliminary of success is good health, which implies certain conditions and among these are nourishing, substantial, but not heavy food.* Secondly, we must have moderate but sufficient exercise in the open air and in sunlight; thirdly, we must have all-healing sleep, and then we must be happy. Happiness is the best of all tonics.

Sleep is of the highest importance. Too much sleep, however, makes our blood circulation sluggish, softens our fiber and dulls our intelligence, not to mention other dangers of a long period in bed. But the sleep that restores our energy is necessary. How long one should sleep it would be ridiculous to attempt to say. The amount of sleep

*NOTE: It is essential that we be well nourished, and no one attains his maximum of energy if he has not solved this problem intelligently. There are those who will not willingly wear clothes which have not been made to order, yet who accept a diet compounded for any and all, which is necessary to the profits of restaurant and hotel-keepers. It would be impossible to say how many persons have had their energies destroyed by a dietary that is not "made to order." Most maladies are the effect of carelessness in our ways and means of alimentation so that our régime of error gradually eventuates in inevitable disaster.

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required by each of us varies according to the individual, and it varies again with the individual at certain seasons, in certain occupations and in different states of fatigue. Each of us must observe his need of sleep and regulate the amount in accordance with his best judgment.

Yet there is one rule which all must observe. As soon as you have experienced a sleepless night, quit your work and take some exercise in the open air. When insomnia is not caused by excessive indulgence in stimulants or defective digestion, it is the sign of the beginning of nervous exhaustion. When sleep goes from us, everything goes from us.

Walking in the open air, which stimulates the circulation and oxygenizes the blood, is also a fruitful means of meditation. Beethoven used to hurry across country, note-book in hand, to make memoranda of the ideas that occurred to him. He spent whole days in the open, forgetting even to eat. During the time he was composing his *Ninth Symphony,* his pre-occupation was so great that more than once he lost his hat. Plutarch tells us that Cicero, who was a bundle of skin and bones and suffered from stomach trouble, ate

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sparingly and infrequently. He liked to walk and during his walks to work on his orations. "Whatever I am composing or cogitating," he said, "I do during my walks." And Pliny the Younger says: "It is wonderful how the mind is stimulated by bodily exercise." In his "Autobiography" Herbert Spencer writes: "Often I went walking in the fields when I was deeply occupied with a subject, because at this time, as always, the work of my brain was done almost entirely in the course of walking." I myself composed "The Education of the Will" almost in its entirety on the seacoast at Bastia and the hill of Saint Catherine at Bar-le-Duc. All the books I have published I can locate geographically in some beautiful spot of Ardèche, Champagne, Savoy or Provence. In "Ecce Homo" Nietzsche writes: "Spend as little time as possible seated. Do not trust an idea unless it has come to you in the open air when one is in free motion. The muscles also must have their holiday. All prejudices come from the intestines."

The conditions of life in cities oblige the majority of brain-workers to spend most of their time in a sedentary position. They are

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contemptuous of manual effort and suffer from muscular atrophy. Our methods of education systematically ignore our 368 muscles and produce in consequence men who are incomplete. For these persons of atrophied muscles manual effort soon becomes an insupportable burden instead of being, as it should be, a condition of robust health and a relaxation. So they avoid manual effort, and as the result of living contrarily to the requirements of nature most brain-workers are weak and ailing. Their energy dries up and the brain soon loses its youth and vigor of initiative. Their mental equilibrium falls out of poise and they become the prey of the joys and satisfactions of vanity.

The system of doing one thing at a time and doing it whole-heartedly during our hours of energy sweeps our life clear of interminable hours of semi-somnolence. We are freed from the stagnation of inertia, our body is no longer numb as we sit at our work-table, and our blood circulates properly. Life becomes a pleasant affair, for we have some hours each day for sweet leisure outdoors. We remain young and escape the stigmata of a waxen complexion, dull eyes, stooped shoul-

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ders and ill humor which make up the ridiculous figure of the *Herr Professor* of beyond the Rhine.

We can always recognize the true worker in one whom we see getting the benefit of the open air every day.

It is absurd, when we are really working, to seek relaxation in what are called "Amusements," as for instance, shutting oneself up in a smoke-laden café or, in dulling our mind playing cards. We must learn to find our recreation in efforts to develop ourselves, in the feeling of power which active energy affords. What resources lie at hand in walks and tramping tours, in the contemplation of nature under its manifold aspects! Then consider our opportunities in such sports as rowing, fishing, hunting. Also to be noted are the pleasures of family and friends; and finally the recreative reading to be found in novels and books of travel. But we must reduce to a minimum sedentary pleasures, which tend toward stagnation of the circulatory system. We must learn to saunter idly in the open air and find naïve delight in everything. How many writers there have been who stupidly ruined their

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health because they did not know how to rest and recreate themselves! Life is sufficiently long and it is better to work in wise moderation during forty years than in excess during fifteen. This is the more important because of the fact that excessive work impedes harmonious intellectual development, which requires much time and a very leisurely ripening.

ORGANIZATION OF PERSONAL ENERGY

There may seem somewhat of contradiction between the advice that we should work only for a short number of hours and the advice that we should economize our minutes. But there is no contradiction here if we duly understand the distinction between intensive effort and mechanical effort which draws only in a minor degree on our intellectual forces. The calls upon will-power in these two operations may be compared to the demand on our physical energy made in a climb up a rocky cliff and a walk along a highway. The latter requires neither attention nor strenuous effort.

Our brain is always active. Perceptions, internal sensations and feelings excite a con-

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stant play of capricious ideas, a reverie at which the will assists as a spectator. This continuous unfolding of states of consciousness, which is automatic in process and follows the laws of the association of ideas does not cause fatigue. Fatigue is caused by the voluntary governance imposed on the association of ideas through an act of attention.

Elsewhere we have studied the delicate mechanism of the direction of thought, which constitutes our liberty. We are not masters of our associations of ideas, and in this, as in all things, we can command matters only when we subject ourselves to their laws. We face the unfolding of ideas within us much as the man at sea scans the waters with his searchlight. If he observes a suspicious object, he fixes his light upon it in order to scrutinize it carefully. Similarly, when we are interested in an idea we fix upon it the searchlight we name attention. Thus vividly illuminated, the idea acquires importance. It rallies about itself, through the laws of association, a multitude of memories, impressions, feelings. All our will-power consists in this illuminating attention, which we shed upon the idea or feeling we choose among

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many. Often it is difficult to keep the attention fixt on a certain state of consciousness, but we know that habit is the liberator of the will. An act difficult of accomplishment at first becomes positively easy when we have performed it frequently; and from being easy of performance it becomes automatic.

If we thoroughly understand this fact it is plain how richly a worker may profit by the great law of habit. With slight initial effort we can train ourselves so that our brain operates usefully instead of frivolously and wastefully. A river that wanders aimlessly in and out in countless meanderings may be turned into a channel which will conserve and direct its force sufficiently to drive a mill. The same holds true of the mental force wasted in frivolities, if we concentrate and direct it to do useful work—and at no greater expense of energy.

The method by which we attain such control is to interest ourselves in our work and to have keen attention on it, so that every passing idea, if it have any connection with the subject of our preoccupation, is seized in its flight. Thus in Newton's mind there was the ever-present hypothesis of the law of

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gravity, which vague enough in its hypothetical state, became, as it were, a sudden conclusion when he saw the apple fall.

For twenty years I had observed the fallaciousness of our method of teaching French composition, when one day there came to my mind a plan for a rational method which is the purpose of my book on "Apprenticeship To the Art of Writing." So earnest was I in my convictions that I may say, without exaggeration, during these twenty years scarcely a day passed without my thinking on this subject. I found examples for the illustration of my principles, ideas and suggestions in all my educational work, in my reading and in conversation. My attention was always on the alert for matter pertinent to my subject, just as the mariner keeps his searchlight on the alert for objects he may meet at sea. In a sense a book must be built up little by little in the brain without the cooperation of the will. We hear it sometimes said of very difficult research work that one might as well look for a needle in a haystack. To him who has learned to have a governing idea in his brain the needles come of themselves from the haystack, as if drawn by magnetic attraction.

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This attraction is the general law of our thought. It is by this process that prejudices and superstitions are created. The peasant who believes in the predictions of the almanac is oblivious of the many cases in which these predictions proved utterly false. He takes note of and keeps in mind only cases in which the prediction proved true.

A victim of infatuation can see only high qualities even in an unworthy woman he loves. A mother is unable to see the faults of her child, but is fully aware of his slightest qualities and magnifies them. A party man can not see the kernel of truth imbedded in the doctrines of his opponents, and does justice to those who oppose him only with great difficulty. All preconceived opinions render us deaf to those who contradict them and incline us to lend a willing ear to those who confirm them.

The arbitrary attitude of the mind is normal. Therefore it behooves us to use this kind of fascination of the attention toward all that harmonizes with our dominant idea. There may be one dominant idea or several, for we gradually interest ourselves in several and they all acquire the magnetic force which

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attracts everything that is in some degree charged with the same electricity. At about my twenty-seventh year I had sighted the several greal truths, the mere development and exposition of which has been the work of a lifetime. I find in my note-books various and sometimes cumbrous plans of my several works. Through the close relationship of governing ideas in my moral and intellectual development, I have been able for the past twenty-five years to profit by the sum total of my experiences, my reading, etc. Even in reading mediocre books and second-class novels, a remark, a witticism, a reflection would leap from the printed page, as the needle springs to the magnet, and would take its place in the mass of facts already classified. So when I have planned a chapter of a book and have laid my note-books out in order, observations and readings of yesterday align themselves with documents of ten, fifteen and even thirty years past. The work of my whole life converges in orderly array at one point, according to my desire. This, moreover, is the Incorruptible Accountant appearing in another guise. What strength there is in these serried battalions of obser-

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vations and facts, which we have been steadily organizing through the years as vital reserves to support us in our final charge for the conquest of the truth!

The deep sense of power we possess as the reward of a lifetime of labor is not only a comfort to the intelligence, but also to the soul. It gives us confidence and serenity. It fortifies us against the attacks of ephemeral publications and the ill-will that those who have power without influence display ordinarily toward those who have influence without power. It enables us to accept with a light heart injustice and persecution, which have never been spared to those who accomplish an important work.

It will be understood from the foregoing how, without great effort, we may always have our work in mind. Our brain must, so to speak, be set as a trap to catch every passing idea that chances along the path of the various objects we have in mind. Observations, remarks and reading provide these ideas, that fall easily into the trap, and we have only the trouble of gathering and sorting them. In a few years we have a wealth of material; and I repeat that the only effort

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involved is the normal and ceaseless unfolding of the fortuitous and capricious associations of ideas.

Even in our hours of sleep our mind will be alert in the same process. No matter at what time I may awaken in the night, I have found it often happens that some ingenious comparison will occur to me, some picturesque phrase, an objection to be met, a new plan for a chapter, a new lead of thought, etc. This is infinitely less fatiguing than to awaken to the consciousness of some misadventure, an injustice done to us, a mistake committed by us. For I shall never cease to aver that among the chief causes of nervous exhaustion are disappointments, cares, disquietude, friction and trouble in general. There can be no such thing as overwork if there be not that gnawing of the heart which comes from sadness and sorrow. Only the heart and the stomach are prey to this ill; and melancholy and bitter ideas disturb the action of the heart and dry up or poison the secretions. Grief and worry are the great sources of exhaustion.

On the other hand happiness is the most efficacious of tonics; and there is no happi-

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ness more lasting or more deep-seated than that which proceeds from the consciousness of fruitful effort.

So we have solved the above-mentioned seeming contradiction between the advice to work during only a limited number of hours and to think always of our work. When we assume the offensive, we must do so with all our might. During the rest of the time we must direct the action of the brain along certain chosen lines, or else this ever-moving force will spend itself in reveries, fantasies, and brooding on minor difficulties. On these chosen lines the collection of useful material for our purpose is made without effort of the will. Let us work when we work, and at other times let us manage so that the constant flow of associated ideas automatically produces useful results, even when we are amusing ourselves, are merely idle or are sleeping.

We should work only a few hours each day, and the rest of the time we should enjoy the open air, the sunlight and the conversation and company of friends, while our brain automatically grasps every passing idea and impression of service to our purpose.

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ONE'S ONLY HELP LIES IN ONESELF

But we must be careful to guard ourselves against the delusion that work can be done as by a miracle, without any effort on our part; and we must never depend on outside help. Results are obtained only by ourselves, through properly used hours of energy, and through the accurate record kept by the Incorruptible Accountant of our many little victories over ourselves.

To the young man who pines because he thinks himself isolated in a small town or in a village I would say that his lot is no different from that of the students at the Sorbonne. He must stoically admit to himself the sorry truth that to-day no one helps another. Perhaps this is so because no individual is exactly like his fellow. Universities, where everything should be subordinated to the aid and perfection of the student, are bodies without soul.

Their organization, materially considered, is often excellent; their organization, psychologically considered, is yet to be created. It has been justly remarked of the Sorbonne that it wears a hostile aspect with its grey

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walls enclosing sombre corridors. The monks of the Middle Ages, who understood the sustaining spirit of familiar places, created the cloister as a friendly and intimate place apart. Round the silent court, into which came floods of light and air, stood slender columns and sundry sculptured figures. Every detail of the place invited one to leisurely promenade, to conversation and meditation. Moreover, when one of the monks felt despondent, he might seek sure comfort and encouragement in talk with a brother monk. The monks never experienced the cruel isolation that falls like a stroke of paralysis on the souls of so many high-spirited young men, who are lost in the desert of a vast and uncaring city.

Save for a few exceptions, the average professor in our universities is either too high above or too far away from the student. He has his personal labors and the responsibilities of his post, so that he lacks the time to become a director of studies for which work of guidance a very rare quality of brain and soul is indispensable. In consequence the student is in danger of becoming wholly isolated.

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At least, I venture to say, study-work might be organized by formulating rules designed to correct unsound methods, and by affording the student counsel and encouragement. But nothing of the sort is done. In all my student years none of my professors ever gave me a word of advice or of stimulus. None of them seemed even to imagine our discouragements and the loneliness of our lot, nor attempted to lend us a helping hand in our moments of dire need. Nobody ever took the trouble to help us to see clearly within ourselves, and take account of our defects and of our qualities. There is a complete system of the education of the will of very diffuse technic for moralists and directors of conscience, of which we did not know the first principles. No one among our professors, who were long experienced in life and work, had the slightest concern for our ignorance and our weakness. If we would be saved, we must save ourselves. The only value of universities lies in their provision of libraries and laboratories, and above all in the companionship of intelligent fellow students, with whom one talks freely of the perplexities of one's work. Even in the laboratory it is unusual to find professors

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who know how to bring the young mind to achievement, to help it become wholly itself, and to initiate it into the joys of creative effort.

At bottom the one problem is to induct the student into personal realization of the profound emotion of creative effort. Once he realizes this emotion, the goal is reached; work is transformed in his eyes and his will is electrified with enthusiasm.

We may compare the change to that experienced in a religious conversion. The realization of Divine Love completely alters our standard of values. Poverty, suffering and humiliation become the object of ardent zeal. Life is transfigured. Money, power, the pleasures of pride that formerly were so hotly pursued, have no longer any more attraction for the neophyte than a child's toys have for a grown man.

So also when a student has once experienced the consciousness of strength, sturdiness, and self-confidence which creative effort brings, all petty vanities of success become valueless in his eyes and pseudo-effort is revealed to him as contemptible. I remember one occasion when I was sent to a small city

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in the south of France, where the libraries contained no books on philosophy, nor were any to be bought in the book shops. I had spent several years in Paris immersed in lecture courses and reading, and had amassed an encyclopedic fund of ideas as it were by hearsay. Left to my own resources in this small southern town, like the sole survivor of a shipwreck, I was obliged, like a philosophical Robinson Crusoe, to create my own course of philosophy. It was a happy shipwreck for me, for as the result of it I discovered that all my previous work had been pseudo-effort. I came into the realization of creative effort in which is implied one's entire individuality. Once the student has known the heat and glow of this revelation he has no further need of outside help. He is touched with the sacred fire. He has the faith that moves mountains.

But in order to lead him to this decisive experience, it is imperative that we have a profound knowledge of the nature of his mind and of his tastes. A teacher should consider that his primordial duty is to be a discoverer of minds. Moreover, he should show and prove that he lives only for his work and that

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he is sparing neither of his time nor his energy. . . .

Therefore, I say to the lonely worker in the field of study, put not your faith in the value of help that comes from outside. It can never be your essential aid. The essential aid is that you throw yourself resolutely into your work, with courage and vigor. If you do this, outside help may serve as a perquisite. If you do not, all outside help will be to no purpose. This outside help in intellectual effort may be likened to the help afforded by a mountain guide in a difficult climbing feat. The fact that he has mounted this difficult bit of cliff proves that it can be climbed. If need be, the rope he carries may be of assistance to you; but you will never succeed in climbing the rock unless with your hands, arms, knees and feet you exert every muscle to grip the cliff point by point in the ascent. Minor help may serve us to a degree, but the essential factor is the help we draw from within ourselves.

Above all things persevere, and remember that you have but one sure friend and protector, the Incorruptible Accountant, who, minute by minute, inscribes on your brain,

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in the form of liberating habits, your slightest acts of patience, calm, endurance, heroism. You will understand later that work is the only means of escape from that intolerable isolation of spirit which plunges men into all kinds of folly. When you have become somebody, you will always have an interesting companion at least in yourself.

COOPERATION

Our educational system is founded on a purely selfish basis—each for himself. We have not modelled it on that of Port-Royal, where work was done in common in a large study hall and all cooperated fraternally. We should reestablish the friendly cooperative plan of the old schools of painting, in which the students watched the procedure of the master as he painted and they painted in concert with him. Then he would point out their deficiencies to them and give them practical advice. In Vasari's works we may learn in detail of the admirable system of the studios of the Italian painters of the golden age.

The Pasteur Institute, where fraternal cooperation has always been practised under

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the direction of Pasteur, Duclax, Roux and Calmette, offers excellent evidence of the rich results of this method. Another successful practitioner of the cooperating method was Gaston Paris, whose patience and scientific probity were admirable. He stimulated research and study by maintaining a huge correspondence with a host of medievalists. He directed companies of learned men, as we are told, "not in the manner of those servants who make others work under their orders, but in accordance with the beautiful precept 'that each by his own law tranquilly seek the light.' Happy to find originality in others . . . he was ever busy dispensing ideas and assistance." Again, we are cautioned not to look only in his works for all the accomplishments of the man, for through "his power of suggestion, of direction and of illumination" he was the guiding spirit of medievalists for a period of forty years. His death fell as a blow on his disciples, because it was he who had taught them "how and why we work."

The practise of cooperation in study should be thoroughly systemized from our preparatory colleges upward. It would be so simple in literature, in history, in philosophy, to set

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a whole company of scholars to the task of discovering the salient features of a literary character or an epoch; the proofs favorable to a certain hypothesis; facts recorded in history that either confirm or disprove a theory. Thus, for instance, a cooperative study might be made of such subjects as: Molière's literary opinions; the character of *The Fox* in La Fontaine; the comic spirit of Pascal as evidenced in "Provincial Letters."

In preparing for the professorship in philosophy some of my fellows and I set ourselves to the task of acquiring the fullest comprehension of the Greek and Latin authors appointed for our study, as well as of the commentators on these authors. There is scarcely an important word in the texts of these authors which is not illuminated by some significant passage of the author himself or of a commentator. There are pages in Aristotle, fully to understand which demands considerable labor; and if three men study one such page at the same time, more rapid and more thorough progress is effected. Furthermore, the labor is more spirited because of the exchange of criticism and objections in the combined activity of their dif-

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ferent minds. Each man contributes his quota of suggestions, discoveries and reflections. In this manner I read John Stuart Mill's "Inductive Philosophy" by joint reading and discussion with a young savant of brilliant promise. This cooperative method of work is excellent provided it be followed in utter sincerity without pompous pretense.

In the mere competitive effort of several minds, toiling vigorously on a given subject, there is a greater possibility of individual advancement.

Teachers and instructors of all grades might do much to further this method of cooperation; but they must be careful not to thrust themselves too far forward in the matter. They should consider each class as a cooperative body of research. Whenever I see a Latin teacher explaining a text, seeking and finding the proper word of translation, and recalling the rule involved, a feeling of impatience comes over me. It is the duty of the scholars to cite the rule, to consult the grammar, and to find the proper word of translation. The teacher who intervenes before the case becomes urgent, is to be charged with having executed a *coup d'état,* and for a

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republic of awakening minds he substitutes his sterile despotism.

Is it too much to expect from the common sense of the nation that the capital lesson of the war shall not go for naught? In the immense collective effort of war did we not all learn by direct experience the necessity of team-work, of cooperation? Are we to find that intellectual workers are as solitary in their outlook as humdrum peasants, each of whom cultivates his little plot of ground instead of all combining their means of production? Peasants and intellectuals are both unprogressive as workers because they are too individualistic and do not understand cooperation. Meanwhile I should like to add to the cases I have offered in testimony to the value of cooperation, the case of great newspapers. Editors do not sign their articles, for they owe all their knowledge to their newspaper and they are not allowed to publish anything on their own responsibility. All efforts converge toward the success of the common enterprise. Yet there is nothing very fruitful or attractive in this drastic scheme of cooperation. Cooperation in intellectual effort must be free and presup-

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poses leisure, for inspiration is fitful and will not be governed by discipline of the Prussian style.

But as the particular cooperation I have been treating is not a matter of to-morrow or the next day, the wise brain-worker will aim at a judicious personal administration of his energies. He will occupy his hours of medium energetic power with the preliminaries of work, such as research among books and documents and general reading on a subject. He will learn to dispose of his arms, munitions and equipment so prudently that he will derive from his hours of high energy their full meed of productiveness.

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IV

STUDIES OF CERTAIN GREAT MEN

It would be of great service to the world if there were in existence honest and authoritative records of the methods of work employed by great men. Such records are rare and for a very obvious reason. In the case of rulers, ministers of state, administrators and men chiefly celebrated for their energetic powers, it is almost impossible to secure an accurate account of their methods of work. Nevertheless it is plain that we should derive great benefit from a knowledge of their working habits and of their procedure in matters of thought. The trouble is that most public men are always on parade, and are not seeking to have the eyes of the world see them as they really are, but as they wish to be considered. Their overwhelming assurance imposes on nearly all people, and they know it. In the face of their dogmatic utterances and their tranquil cynicism, the critical sense is paralyzed to a great degree even in per-

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sons of intelligent mind. The leaders of men and their tricky satellites, who know how to hypnotize the mob, are equally well-informed on the force of the power they possess.

Thus it happens that we have scarcely any information about the method of work of Napoleon. Roederer, a French statesman, and others have made significant observations. From people who occupy the attention of the "good public," the mimes, as Péguy calls them, we can expect no honest avowals. We all know of the deleterious influence of public applause. The habitual pursuit of popularity is the acceptance of ignoble mental serfdom, because it requires that a person subject his conduct of life to the judgment of a group of incompetents, whose individual intervention in his affairs he would repulse with scorn. Once a person accepts such a condition he breaks all ties with sincerity.

It follows that our only chance of finding genuine and earnest confidences lies among that class of robust geniuses who had need only of their just self-esteem, and who held that there is no reason for living which can equal the joy one finds in creative work.

Let us first examine the method of work of

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certain administrators of unrivalled superiority. We have seen the ease with which the Dutch statesman Jean de Witt accomplished enormous tasks. As he said himself, his main rule was to do one thing at a time and to do it well. Colbert, one of the greatest of France's ministers, followed the same rule and attained magnificent results. In the *Revue de Paris* (Nov. 15, 1901) his method of work is described in his own words as follows:

"To direct affairs a man must rise before six o'clock . . . remain at his desk five or six hours each day. He must consider the business at hand with application and penetration and act on the spot. Allow no papers to lie day after day before settling the problems of which they treat. If you do not push through some matter of business each day . . . it will be impossible for you to find the necessary time to reason and think clearly on all you have to do." Work a few hours each day, but work with all your heart and soul at the appointed task, such is the advice of Colbert.

"There never was a man capable of such complete absorption in a task as Napoleon,"

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we are told. "Nor was there ever any one whose mind so absolutely refused to be concerned with any thought or action that was not presented on the proper day and at the proper hour." But no one ever kept more fixt attention on the objective of any effort. He meditated matters for a long time and was able to foresee everything through intensive reflection.

POLITICAL EFFORT IS UNORGANIZED

It is pathetic to contrast the method of Colbert with the procedure of our statesmen of to-day.

In the *Revue Bleue* (June 10, 1911), Mr. Léon Bourgeois gives us the following picture of the modern method:

"A cabinet minister is occupied in the morning, from nine till twelve, by Cabinet meetings, audiences, treating solely of solicitations for preferment by officials and their friends, and lately, by frequent special sessions of the Chamber. In the afternoon, from four to six, he is detained either at the Palais-Bourbon or at the Luxembourg. In the evening he has innumerable documents to sign, unless it happen that he must preside at a

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banquet. On Sundays he travels to this place or that to preside at some ceremony of inauguration and to spread the showers of decorations for agricultural or academic distinction."

Mr. Raymond Poincaré, also enlightens us on the interrupted effort of a Cabinet Minister as follows:

"He rises early in the morning and finds on his desk a tiny mountain of letters. They are his personal mail. He spends about an hour in disposing of these letters, nearly all of which request some favor. There follows the reading or examination of press clippings, 'that tide of bitter waters.' The reading of these constitutes a distinctly bad mental hygiene. From nine o'clock till noon, a host of senators and deputies descend upon him to urge the political deserts of their constituents, their sons, brothers, nephews, cousins. . . . The next day the morning is taken up with a meeting of the Cabinet, by cinematographic assemblies at which, for a period of from two to three hours, there passes in review a whole sequence of scenes of public life in matters administrative, financial, social and, above all, parliamentary. In the

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afternoon his time is given to the Senate and the Chamber." He should always have large pockets in his clothes for in these halls he will receive further requests and recommendations for preferment.

He comes home late to sign hundreds of papers and letters "as if in a dream, so that he scarcely is conscious of more than intermittent rays of light on the actual meaning of the multitude of decisions submitted to him." There follows a meeting with the leaders of the administration who come to confer with him on matters of delicacy and importance. "He receives them, confers with them, but in such haste, that in his driven state of mind, he accepts their suggestions too readily or, without sufficient grounds, antagonizes their proposals. And in utter good faith, he believes he is rendering a reasoned, impartial, individual judgment."

On the day following, the same distracting life is to be led over again. "If a Cabinet Minister has a legislative project to consider he can devote to it only a preoccupied mind in furtive hours now and again. If he is strong in assimilative gift he will eventually reflect the mind of one of his aids in the ver-

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dict he renders, and so appropriate the other's work."

Then Mr. Barthou tells us that the day of a Cabinet Minister is "a succession of lost hours, amid which are occasional rare moments of leisure which are employed in some useful work."

In consequence of the lack of proper organization in the parliamentary and administrative branches of the government, France has suffered a good deal. A profound study of governmental reform was published in the *Revue de Paris* (December 1 and 15, 1917) in which the author shows that our political machinery as at present constituted can not produce good results. In his view the Premier should surround himself with a stable body of directors, chosen from among the best minds of the nation, minds capable of searching criticism of existing conditions, and above all competent to collaborate in the work of reorganization. Thus the Premier would become the managing director of the political and administrative effort of the country, the coordinating brain. This body of directors would draw upon the best-

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equipped men of the nation for the various technical departments. The Premier would add temporary members to the body of directors, preferably young deputies of acknowledged merit who in this capacity would instruct themselves in the business of government.

The general committee of directorship would examine into questions of the day and coordinate all efforts in the service of the government. The Premier would entrust to them the study of proposed reforms. With their aid he could cope with state affairs as a whole, and calmly and efficaciously exert his will with the Ministers and with the Chambers.

He would have "regular working hours" with each Minister, as was the practise of that hard worker Louis XIV, we learn from Saint-Simon. The Cabinet would cease to exist, for it is "an absurd encumbrance," which takes up a great deal of valuable time three days each week. It has no secretary, no formal manner of procedure. A great law is never discust by the Cabinet, nor reforms of far-reaching influence, nor plans of administration. All the Cabinet's time is spent in

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conversations, for lack of a directive brain to examine, sift and decide on projects under consideration.

As long as France lacks a steady direction in political and administrative effort—to secure which so little effort is necessary—so long will impotence, error and unrest continue, and chance alone will guide the ship of state. The country really keeps on its feet only because of the solid framework of administration which we owe to Napoleon. As John Stuart Mill has said, the government of France is a bureaucracy. This is our strength pending the lack of some organizing power, but it is also our weakness. As Gladstone said, toward the end of his life, there has never been any great bill of reforms that was not set in motion despite the fixt opposition of all governmental departments and governmental experts, and which succeeded contrary to their prognostications.

It is evident therefore, that in order to have an advantageous reorganization of the national service we need a real leader, who can see the end to be attained, clearly and distinctly, and whose will shall triumph irresistibly in the teeth of all opposition.

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We shall not arrive anywhere if our governmental methods of work continue to be so absurd and incoherent that our Ministers have "only intermittent flashes of understanding" of the matters in their charge. If we do not change this state of things the victories of the Marne, the Yser and of Verdun will serve us to no purpose. The wonderful qualities that the French nation displayed under the menace of death, will continue to contradict and negative one another for lack of a central body of coordination and direction.

It would be of great help to us if we had precise information of the manner in which our great reform ministers organized their efforts. Unhappily no such valuable information is to be had. Historians are more interested in the doings and sayings of Madame de Pompadour, than in the underlying causes of the greatness of their country. The primordial source of success, we know, however, lies in the organization of one's work. When the time comes that the government has learned how to use all the intellectual and moral forces of France, France

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will suddenly loom upon the world in new and incomparable grandeur.

So we regret again that generations of later historians have not studied in detail the lives of great organizers in order that we might know about their methods of work.

EXAMPLES OF AUTHORS

In the case of authors, savants and artists of the first class there is not much to be had of self-revelation. Eulogies pronounced above the bier are worthy of little credence, because they are panegyrics. Once men are dead they are removed from the ranks of their rivals, and it is a matter of good form to hold them up to the young as exemplars. Great pains are taken to gloss over their faults and defects. It would seem that they were born as precocious as *Gargantua* who cried at birth: "Bring me a drink!" At their mother's breast, it would seem, they showed the earliest signs of their genius. This is very discouraging to those of us who were unable to walk the first week of our birth.

It is necessary to fix a standard of possible achievement in order that the young may not be discouraged at the thought of attempting

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the impossible. Records of the working methods of celebrated men date always from their period of maturity. By this time they have contracted strong habits, solidified by twenty or thirty years of labor. Their zeal in the cause they espoused has become irresistible. They are sustained in it either by the admiration of the world, or by the injustice of the world, which is the inevitable meed of most men of parts.

There are many instances on record that reveal the injurious effect of such injustice and baseness in human nature. As a result of it some thinkers have become irritable ascetics in the quest and explanation of facts and ideas. Consequently they exceeded the proper limits of working hours to such a degree that they ruined their health. Young people with their whole lives before them should take heed less they fall into a similar excess.

We speak here only of minds of high value, because, in their conscientiousness, they write only after long reflection. Improvization they consider unworthy of their abilities. In consequence they have no great influence on younger writers. Nobody, as a rule, helps

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them or justifies them, for the reason that by probing matters to the depths they disturb and trouble a multitude of successful writers who live on appearances.

On the other hand, it is to be noted, that rewards are reaped by adroit and clever writers who labor in behalf of a party that is successful in the social world or in politics. They play on the surface of things and disquiet no one. In "The Opinions of Jerome Coignard," Anatole France says: "The mediocrities are at once taken up and borne along by other mediocrities; but in men of real talent there is an insolence that expiates deep-rooted calumny through sullen hate." But "word-maniacs" have the satisfaction of seeing the newspapers welcome their facile scribblings; and what a large number of popular writers there are whose incontinence in the use of ink will be stopt only by death. It is the duty of the young writer to distinguish between the prattlers of no depth and the truly vigorous authors, who, unseduced by the constant thought of money and success, are able to "render to reason the respect and diligence that are its due." These rare minds do not rule over our citi-

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zens, as the mighty of the earth, but in them; and altho no salvo of artillery or military band hails their presence, from the depths of their studious retreat they guide the steps of the nation.

THE GREATEST OF FRENCHMEN

Great men there are whose work and personality are discust through the centuries and among them is that greatest of Frenchmen, René Descartes. Who is there that does not admire his sincerity? In his opinion good sense is the most equally distributed thing of all things among mankind. He says: "As for myself, I have never considered my mind in any particular more perfect than the mind of the average person. Indeed, I have often wished that I had thought as prompt, imagination as clear and clean-cut, or memory as full or as ready as others have." This man of genius and of real character, attributes his discoveries to his good fortune in conceiving a sound method of work early in his life. He omits to mention that he was possest of admirable will-power, which was sustained by his ardent enthusiasm in the pursuit of truth. He was the first to perceive

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the force of method in work. And in the terrible World War there appeared tragic evidence of the value of his discovery, for the Germans, with their lumbering deductive intelligence, almost succeeded in reducing the whole world to subjection because they had learned the lesson of Descartes. On the other hand, the French nation, for all its clear and inventive genius, almost perished as a free people because it had not learned the organization of effort.

Descartes affirms that it is not sufficient to have a good mind. The principle thing is to apply the mind properly and well. Those that proceed at a slow pace in walking, progress much farther straight along a given road than those who run and stray from the line of their direction.

Once he had positively grasped the main rules of his method, for nine years Descartes ambled here and there in the world, noting events and criticizing them. From time to time he set apart certain hours for working out his method in mathematical or other difficulties, living meanwhile apparently like others, whose life is easy and correct, and sharing in all legitimate diversions. But he

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was following out his aims and advancing in the knowledge of truth "perhaps more than if he did nothing but read books." He tells us that with intellectual progress it is as with riches: they who begin to be rich have less difficulty in making a great acquisition of wealth, than they experienced formerly in gathering much smaller possessions. All the truths he discovered are only the sequents and corollaries of five or six difficulties that he mastered and which he considered as so many battles won.

As we have seen, there was nothing of the pedant in Descartes. He enjoyed life freely, but he did not squander his intellectual energy. He moved forward, with firm and measured tread, in the straight path of his choice.

We may note, moreover, the facility of his disciple Malebranche, who wrote the most engaging pages we have in philosophy on the importance of attention. Malebranche also was convinced of the importance of order and method. In consequence he was very prudent in the expenditure of his mental energies, and his recreations were as simple as those of a child.

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DARWIN—LYELL

All great men have known how to make wise distribution of their energies and none of them overworked themselves. Consider Darwin, whose influence in the domain of science is so mighty. He was not of robust health, we learn from his "Life and Letters"; and when he was at school the only qualities remarked in him as of good augury were his varied and pronounced tastes, great zeal in a subject that interested him, and a great pleasure in solving any complex problem. He acquired the habit of working energetically, of keeping his attention steady, and gave thought only to such subjects as had direct relationship to his studies. He meditated on the "Origin of Species" during twenty years. His time was all his own, and he worked, first, from eight till half-past nine in the morning, then from half-past ten till noon or a quarter-past twelve. This he considered enough, and he would say with satisfaction: "I've done a good day's work." Some days he worked again in the afternoon from half-past four till half-past five, but not every day. Everything he did, he did

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with a kind of fervent ardor and he never had to do anything over again.

His friend Lyell, a geologist of genius, never worked for more than two hours at a time. Their compatriot Herbert Spencer suffered from wretched health. He let his ideas take shape slowly. It was beyond him to keep his attention fixt for a protracted period, for his nervous system rebelled under tension much sooner than that of most people. In his "Autobiography" he tells us that he never could work more than three hours continuously, after which time he was unable to read anything, even a novel. Yet by concentrating his forces and energy, Spencer succeeded in raising a mighty monument of work.

POUSSIN—VICTOR HUGO—ZOLA

The precepts of Nicholas Poussin, master of the classic school of French painting, are so valuable that we may not overlook them. He declares that when we work we must give our whole mind to what we are doing, and must never be impatient because with time and patience maturity comes in all things. In "Methods of the French Classics"

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Paul Desjardins cites another principle of Poussin, namely, that we attain clearness in expression only by diligent practise. Also he urged that we must always stick to our line of march, that is, when we take up one matter, stick to it until it is finished. Thus our mind is free from the interruption of other subjects. In fact, it is not work that fatigues one, but the thought of what one should have done and has not done. This thought torments us with vague disquiet and saps our energies. Furthermore, work that is only half done yields us no satisfaction; but on the contrary leaves us discontented and with a sense of failure. Then again, if we give only half our attention to any set labor it will require four times as much effort to perform.

Victor Hugo used to rise very early and write for five hours. The rest of the time he enjoyed himself in walking. He never worked at night. Yet his production is enormous.

Emile Zola, a novelist of unusual fertility, spent only three hours each day in writing. His voluntary attention was intense, when fixt on persons or things he wished to des-

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cribe. But this intensity lasted only while he worked, and he would go walking in the street and fail to recognize his very friends in passing. His memory, when provided as a camera is provided with plates, caught everything. Dr. Toulouse wrote of him as follows:

"When Zola was preparing to write a novel, all pertinent facts for his work were registered in his mind without the least difficulty. They seemed automatically to group themselves according to their natural affinity and relative importance. At the moment of writing, images of the things he was writing about came into his mind abundantly and systematically with all their color, form, and even smell. But, apart from this tensive state of voluntary memory, the mind of the novelist did not readily concentrate. When he was President of the Society of Men of Letters it took him three months to learn the names of twenty-four members of the office whom he was obliged frequently to call by name to have them vote."

In Zola we find the same economic adjustment of energy that is noted in all creative writers. He was all absorbed in the task of the moment and we are told by Paul Meurice

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that he "never busied himself with gathering facts about some undetermined subject for a novel. When he was writing 'La Terre,' he was thoroughly interested in peasants and peasant life, but no observation about military life or the financial world would have caught his attention."

JULES VERNE—JOUFFROY—KANT

Jules Verne, who died in 1905 at the age of 77, wrote a hundred books,—two in each year of his productive period, one in spring and one in autumn. At Amiens, he led a peaceful and regular life. Rising very early in the morning, he wrote till ten o'clock, that is to say about four hours. Sir Walter Scott, whose productiveness was marvellous, considered five to six hours a long time at writing, and believed anything written after one had worked for that period could not amount to much. Carlyle, one of England's most forceful minds, tells us in his letters over and over that one never does good work when one is hurried, and that one may attain to talented production by working four hours a day.

Jouffroy makes this avowal: "I never stopt when I came across an idea vague or

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only half clear to me. I separated it into its component parts with great care . . . I concentrated my whole attention on the chief point. I never allowed my mind to stray and kept my energies in strict concentration. To each point I gave full and close examination. It is impossible to over-estimate how many and great difficulties can be overcome by this method, and also with what vigor it infuses the mind."

We may recall also the counsel of Saint Francis de Sales, who urges us not to be hurried, to use ourselves considerately and to do only one thing after another.

In his "Critique of Pure Reason" Kant says that in scientific research we must pursue our course with all possible exactitude and sincerity, and must pay no attention to the difficulties that we may encounter outside our domain. We must perform our task for itself alone, he adds, and in an honest and complete manner. Through experience he had learned that in keeping the attention fixt solely on the subject of our study until we have finished with it, difficulties solve themselves.

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THE CASE OF RENAN, OF FLAUBERT, OF LITTRÉ, OF ROLLIN

There are certain opinions that should be discust at length because they might affect some persons discouragingly. In a famous discourse Renan gave expression to very contradictory counsel. "Work," he said, "work incessantly." He cited the retort of an old Rabbi, who was charged with putting so many precepts into the Vase of the Law that it overflowed. "In a cask that is full of nuts," said the Rabbi, "one may still pour several measures of oil."

Herein Renan confuses work and erudition, work and the trap-system, of which I have previously spoken, by which we capture every passing idea favorable to our purpose. The proof of my contention lies in his statement, in the same discourse, of the following: "Never tire yourselves . . . let thought come to you . . . do not summon it, do not urge it."

In the recollections of one of Renan's scholars we read: "I recall that once we were engaged on some hurried task in which Renan was deeply interested. As he saw that midnight was approaching, he bade me be off to

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bed, saying: 'Leave all that to me, I'm going to work a little while longer.' I learned next day that he had toiled till three in the morning and had completed the work."

Renan's scholar cites this case because it is an exceptional one. Moreover, it is to be noted that the task involved required immediate performance. Renan could not work in the morning, because his brain was drowsy. He was gradually waking up all during the course of the day and only in the evening were his faculties in full play. His methods of work did not include a great total of actual working hours, and they elucidate a remark made about Renan by one of his former teachers, who said: "One recognizes in Renan an erudite man who took pains to remember more things than he took time to plumb to their depths. He is like a delightful spring that spreads itself over a wide surface."

Another case which we may not omit is that of Flaubert, the novelist. In May, 1873, he wrote to his niece as follows: "Yesterday I worked eighteen hours, from half-past six in the morning till midnight. So it goes. Thursday I worked fourteen hours." He is constantly complaining of the grind of his

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labors, and tells us in his letters that he read two books each day.

But Jules Lemaître, who justly admired Flaubert, tells us that he was a great potterer, and it may be even that he was very indolent for, this authority says: "He would take up book after book in his vast library and glance into each, then lie on his divan and smoke countless clay pipes, the while he mused vaguely of the page he had begun to write, and ruminated on phrases. This probably is what he meant by saying he worked 'like a nigger.'" In the diary of the Brothers Goncourt we hear Flaubert described as "a great spendthrift of time." He was always straying from his set path by random reading. How much greater achievements might not so conscientious a writer have to his credit if he had not lost so much time in scattered effort!

Now we come to the case of Littré, who compiled an admirable dictionary. French writers can never be sufficiently grateful to this man, who for all of them is a modest but indispensable collaborator. Many of his definitions are lacking in depth, but his opulence of quotation from authors of value,

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in which we find the precise signification of important words, is an inestimable treasure. He was forty years old when he began his Herculean labors. It took thirteen years to complete them. He had six regular assistants and several occasional collaborators. A slight notion of the effort involved in this work may be gathered from the computation that, if the columns of words in the dictionary were placed one on top of another they would rise just ten times higher than Mont Blanc above the Chamonix Valley. Littré rose at eight o'clock. While his room, which was his study, was being made up, he did some work on the ground floor of the house. From nine till twelve he corrected proof. From one till three he wrote. From three till six he worked on the dictionary. At six he dined; and from seven in the evening till midnight he worked with his assistants. Then he worked alone from midnight till three in the morning. He finished his colossal work in 1865 and he initialled the last corrected proof in 1872, when he was seventy-one years old. Thenceforth he was afflicted with various ailments, yet he declares that overwork was not the cause of them. But there is no doubt that they were

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the results of the overdraughts he had made on his physical constitution.

Now let us compare the working procedure of the historian Rollin with that of Littré. Serene confidence is a distinguishing trait of Rollin, who began his four volumes of a "Treatise on Studies" when he was fifty-nine years of age. At sixty-seven he undertook his "Ancient History," and he completed the thirteenth and final volume of this work in his seventy-sixth year. Incapable of fatigue, he then began his "Roman History." He had written five volumes of this work and had planned and prepared the remaining volumes when he died in 1741 in the eighty-first year of his age, leaving to the world a legacy of thirty volumes in all.

I do not present the cases of physicians or chemists because their intellectual work is healthily counterbalanced by manual work. The laboratory is at once a sustainer of thought and of repose, but it would be very difficult to estimate the time spent therein in profound attention. The savants of the laboratory are a privileged class when one considers their conditions of work as compared with those of men of letters.

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Incidentally, it must be noted that only too many men of letters suffer condign punishment in their days of old age because they have disdained manual effort. They know no way to pass their leisure hours except to continue to work at the cost of eye-strain, physical health and intellectual energy. As excessive smokers, who smoke one cigar immediately after another, as the miser, who becomes more and more avaricious, as the alcoholic, whose thirst grows ever more feverish, they become each day more and more subject to the deadly tyranny of habit. They read and read without ceasing and, unfortunately, sometimes they write in the same proportion. To speak only of men who are dead, I may recall Brunetière and Faguet with each of whom the call to write without having anything to say had become a morbid necessity—that death alone could end. Knowing this, we understand the melancholy avowal of Brunetière that he considered work as a form of slow suicide. For a long time, alas! instead of working with alert energy, which presupposes a condition of repose, calm and much leisure, he had been drudging pathetically without respite and without joy in

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valueless productions. He had the same conception of work as had the Prior of the monastery in the chapel of which Leonardo da Vinci was painting the mural pictures. The Prior complained to Duke Ludovico that his painter spent much of his time merely dreaming and not working. As Vasari gives the anecdote in his "Lives of the Greatest Painters," the explanation vouchsafed to the duke by Leonardo was that painting requires thought as well as action. Moreover he made the duke understand that, often in the case of superior minds the less they seem to work, the more work they are doing, because they are thinking and formulating in their minds the perfected idea they purpose to render with their brushes and paint. Incidentally, da Vinci had his revenge on the captious Prior by using his face and figure as model for his representation of Judas on one of the chapel walls.

Having reached the end of this chapter let us consider the conclusions to be drawn from what has been stated. The arguments originally offered as to method in our work are justified in the discoveries we have made about the working methods of various great

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men. We must be virile, but not brutal in the use of our energies and keep their highest hours of potency for creative work. During these sacred hours we must give ourselves up to our work with all our mind and heart. As they are limited in duration we must take heed to avoid any diversion or dissipation of our attention. We must do one thing at a time and only that one thing. We must perform well any work we undertake and we must perform it completely. We must be wholly ourselves and so train and organize our faculties that even during leisure and sleep they are in automatic operation.

But we must husband our strength and be careful never to over-work. If we wish to engage in any undertaking. let us adjust our aptitudes to the requirements it involves, concentrate our minds on it, and hold as our assets time and the Incorruptible Accountant. Then let us bring to the work in all its details conscientiousness, self-confidence and indefatigable perseverance. We should have in mind the oak, which, at first a small acorn, through years and years of patient development becomes a mighty and majestic tree, the symbol of strength and energy.

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BOOK II

PSYCHOLOGICAL BASES OF A SOUND METHOD OF WORK

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I

ATTENTION

IMPORTANCE OF ATTENTION

Persons who would employ their abilities at full capacity should know that the two instruments of such perfection are the attention and the memory.

Mastery of the attention is the distinguishing trait between the wise man and the fool, between the man of real worth and the mediocrity. The wise man knows how to banish brooding thoughts or the inevitable disappointments of life, which the hypochondriac clutches to his breast and from them draws only bitterness. The mind of real worth fixes facts of positive influence as with a dart and ranges them in order. The scattering mind gropes here and there among insignificant facts and its findings are a huddled mass of useless lumber.

Only through the habit of attention can we become free men, personalities. No one can

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say that man is free who is tossed by the four winds like a ship without a rudder. To be free means to direct by duly meditated choice our feelings, our thoughts, our actions. We can not direct them in detail, but we can guide them in a general direction. This is the procedure of the captain of a ship, who is unable to escape contrary winds and currents, but who continually verifies his course by consulting his compass. Similarly, I myself am a free individual when, having chosen a line of progress in harmony with my tastes and my deeper inclinations, I keep to my course of advancement in despite of temptation to idleness, in despite of the thousand and one distractions and seductions that betray the will. Now I can not keep to my course unless I have my attention constantly fixt on a dominating idea. A person prone to distraction is incapable of such concentration. At every turn he strays from his course of thought and loses sight of the main issue. The famous French alienist Pinel relates that a certain insane patient, who craved to be released from confinement in an asylum, was able to command sufficient presence of

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mind so that he succeeded in passing the tests which entitled him to liberation. But when the authorities laid his discharge papers before him the patient signed himself "Jesus Christ." This unfortunate man forgot the resolution of mind he had summoned to conceal his insanity, in the course of the long and exacting examination he had to undergo and in the elation stirred within him at the thought of being released from the asylum.

We must so concentrate on a chosen idea that it acts like a mighty magnet, which is unseen, yet constantly exerts its power. This is the highest manifestation of will-power. If the ever-present idea is ambition, we have a Napoleon. If the ever-present idea is the soul's salvation, we have saints and martyrs like Polyeucte. If the ever-present idea is a scientific hypothesis, we have a Newton or a Pasteur.

At the opposite extreme of such heroes of the power of attention, we find demented persons who are incapable of holding to one idea of reality for more than a few seconds; and at a somewhat higher degree of mental capacity we find persons of scattered and distracted attention whose name is legion.

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Hurry and distraction are the errors of the present day. Most people suffer from nervous breakdown of the powers of attention. Pupils seem unable nowadays to listen, and are incapable of repeating a question asked of them, unless it be of the most elementary sort. They are unable to follow a line of argument, to distinguish the relationship between various propositions, or a connection in any degree subtle that may lie between a group of ideas. I have known those who were quite bewildered in an attempt to realize the proportion *A* is to *B* as *C* is to *D*.

There are too many neurasthenics and too many somnolent persons in our class-rooms, who are able to acquire only crumbs of knowledge. How is it possible that their minds should be other than scattered?

At home they are the victims of a cult of self-pity. The family conceals from them nothing of its difficulties, its woes, its desires and preoccupations . . . what is more, the family takes their part against their instructors, who are so unjust and inhuman in expecting marvels from these poor, delicate darlings.

It is to be noted, however, that only too

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often instruction in our educational institutions is wholly devoid of interest. Pupils are the prey of grammatical abstractions, which are unintelligible to them and distil in their minds the poison of boredom. Overburdened plans of courses dismay them, and, as it were by authority, habituate them to scant their work which they do. In his "Autobiography" Herbert Spencer says that such curricula as these tend to increase the sum total of ignorance and only too often they fail to illuminate work and justify it by showing its precise utility in the culture of the mind. We must confess also that our educators are in large part responsible for the defective powers of attention among our pupils.

Matters being as they are, it follows that he who has not had the advantage of an education in the will and in the attention should set out courageously, to acquire one by his own effort. He must know that the essential evil is the debility of the attention through indolence and random and vacillating effort. This inferiority of the voluntary attention is aggravated by a kind of mental vagabondage. We are always "off some where else," as Malibranche says. Our mind is continually

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wandering idly hither and thither and as Leibnitz puts it, will not submit itself to attention, order and rules.

In my "Education of the Will" I have written at length on the deleterious effects of scattered powers of attention among students. It is melancholy to consider how many persons of first-class mind, of brilliance and high temper, who might have rendered noble service to the nation, have allowed themselves to waste away day after day, idle and unproductive, simply because they did not know how to concentrate their attention.

VOLUNTARY ATTENTION IS RARE

It is regrettable, but true, as Ribot shows in his volume on "Attention," that acts of voluntary attention are rare, and he says: "First of all let us eliminate the routine of our lives, that enormous mass of habits, which move us as so many automatons. Let us eliminate the periods of our mental life when we are in a merely passive state . . . Let us eliminate that relative state of mental repose, when we think of nothing . . . Let us eliminate moments of passion and agitation. When all these are eliminated, we may write what

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remains in the general total of the attention. In this general total cases of spontaneous attention are very numerous, but the positive cases of voluntary attention are very small in number. With many they amount to almost nothing."

It is deplorable that the moments of attention should be so few in number when we realize how much progress is gained by proper use of short periods of attention. Like radium the attention holds mighty forces in narrow compass. As a matter of fact, if we closely watch a good student at work, we shall be surprized to discover how often he is distracted during the time he studies a lesson. He assimilates it merely by devoting to it short intervals of attention. I can cite pupils, who were incapable of giving their attention for more than five minutes at a time to a subject that interested them, and yet who ranked fifth in a class of twenty-four. If we are honest with ourselves we must admit that our best intellectual productions are the fruit of some several quarter hours of fervent attention.

The really progressive movements of humanity are due to a minimum expenditure

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of this precious factor the attention, which works miracles when, despite habits and prejudices, it penetrates to the living fold of realities and the essential relativity of facts, as it does in the employment of the creative mind in the sciences, in the arts, in politics and in letters.

In the silence of external surroundings, in the calm of our emotions, in the subsidence of interior tumult we should aim to keep the flame of attention, high and brilliant for some minutes. These sacred minutes should recur often during the hours of meditation that prepare the way for them; and such mental concentration should be the goal of every student who wishes to become a success. According to the Buddhists there are five obstacles to attention, namely: brutal desire; hatred and malice; sloth of mind; disquiet and regrets; perplexity and indecision. If the student cultivates the habit of attention he will escape that somnolency of mind which is neither a state of work nor of real repose. He will add to his sum of leisure in proportion to the energy of his moments of attention.

It is to be noted also that voluntary atten-

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tion is susceptible to training, that is to increase and improvement.

BREATHING AS A FACTOR IN ATTENTION

Books on psychology are laden with metaphysical discussions. It is not within our province to explain whether or not there is any mysterious intervention of the soul in the act of attention. In this work of ours we are dealing only with practicalities—we want to know in order to act. We do not know what the attention is, we only know its functions. Its functions are closely allied with our breathing. For example, if you take aim at something, even in imagination, with a rifle or a pistol, you will discover that you can not take aim, that is fix your attention, unless you hold your breath. Every modification of the attention is necessarily accompanied by modification in the rapidity and depth of breathing.

The Buddhist monks, who developed the education of the will to an admirable degree of perfection as a means of concentration, fully understood the importance of breathing in the act of attention. They discovered the control over thought that is inherent in the

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control of our breathing. By training themselves to breathe twelve times per minute, then five or six, then once only, which requires months of assiduous practise, they cast out of their minds anger, hatred, disquiet and fear, all of which are poisonous to the will. By slow and deep breathing, we induce a condition of mind which is favorable to meditation, for a great calm comes upon our heart beats. We have contracted the lazy habit of not breathing deeply. We inhale and exhale through one nostril only, and it requires considerable practise to learn to breath through both. Yet even such an accomplishment is a victory that has a bearing on the power of attention. What is more, as a result of our indoor life and the unintelligent separation of mental and manual labor, we have acquired another bad habit. This is that we use only a part of our lungs in breathing. Because of such lack of use our respiratory organs lose somewhat of their full capacity and consequently there is a loss in the power of attention.

The importance given to the control of breathing by the Buddhist monks is based on scientific knowledge, and our children should

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be trained in this control from an early age. I never set about my work until after I have indulged in some exercises in deep breathing. And these physical exercises should be supplemented by exercises in respiratory will, which are enjoined by the Hindu masters of the meditative life.

As we fix our attention only in the intervals of breathing, our attention can not be uniform. It consists in a succession of tensions, which take place in the moments between the respiratory movements and cease during these movements. During one minute of attention on the part of a man of ample respiratory movements, there occur a dozen inspirations and exhalations each of which consumes a little more than two seconds, making a total of about half a minute. Therefore during one minute we must conceive the attention as formed of about a dozen tensions, cut by so much repose during which the respiratory intake and outgiving is effected. We may compare the mechanism of the attention to the rays of the lamp in a lighthouse, which every minute undergoes twelve eclipses of two seconds each.

Among most children the loss of attention

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exceeds forty seconds per minute; and in many it goes as high as fifty or fifty-five seconds. It exceeds even this high figure in children who are afflicted with growths in the nose, cold in the head or have some pulmonary complaint.

It is important, then, that in cultivating our powers of attention we keep watch on the rhythm of respiration. We have seen that deep breathing from the entire lungs leaves long intervals of pause and therefore permits of longer and more fruitful efforts of the attention. As a matter of fact the greater number of children and of adults do not know how to breathe. Let us suppose the average person attempts to climb a cliff. Certain unused cells in the lungs are suddenly and violently called into action, which causes a whistling noise to proceed from the pulmonary region. In my own experience, I have noted after numerous climbing expeditions in the Alps, that my breathing remained deeper for a long time following, and so farther spaced apart, with the result that I was capable of much more intense efforts of attention. It is true also that if we do intellectual work in the country, between intervals

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of active physical effort, our attention is deeper and more concentrated.

This is one more argument against the pernicious practise of keeping children at study for long periods of two or three hours in the confinement of rooms in which they breathe devitalized air.

There can be no power of attention without pure air, which stimulates the appetite of the lungs. It is necessary, consequently, to stop work every so often, open all the windows, and perform some energetic breathing exercises. In a word, we should always keep general supervision of the air we breathe toward the end that our respiratory rhythm be facile and ample. Walks in the open air and sunlight, mountain climbing and a little heavy work in the country are salutary aids in developing our breathing apparatus.

Of course, we should avoid any physical pressure on the thorax. Thus, for instance, among young women, a corset may hinder intellectual growth by lessening the respiratory capacity.

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MECHANISM OF INTELLECTUAL FREEDOM

The attention is, moreover, closely connected with other muscles than the muscles involved in breathing. Even admitting that the will and the attention, which is the superior form of the will, have an independent spiritual existence, they are so deeply "incarnate" in the human body that everything occurs as if their relationship were indissoluble. The attention, like the will, acts only on the muscles and through the muscles. The simple proof of this statement lies in the fact that we can think only through words, and that a word is a marvellous agglomeration of muscular memories: memories visual and graphic, and, above all, memories of articulation. This condition which at first blush would seem humiliating to the spiritual faculties, really enfranchises us and makes us free beings of a moral order.

What after all is the matter of capital importance to us? It is this, that we can direct our attention, that we are able to keep an idea, a thought in the light of attention. On the other hand, it is imperative that we be able to refuse to permit an idea or a

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thought to live and develop. This liberative power we can exercise and strengthen solely through our muscles.

By way of explanation let us consider what happens when the will intervenes in the procession of thoughts, images, memories and ideas that move constantly across the luminous portal of the mind, like a succession of moving pictures. The figures formed by the grouping of the individual elements of this procession, and by their appearances, are of very great variety. Images, memories and ideas foregather and pass on according to the laws of the association of ideas in a realm of chance and disarray. To understand this statement we need only ponder for a moment on the capricious play of these associations of ideas. Mont Blanc suggests to my mind the Caucasus; the Caucasus, the Turks; the Turks, "Candide"; "Candide," Voltaire, who wrote it; Voltaire, Fernay, the place where Voltaire lived for twenty years. This is a fair specimen of the thousands of absurd vagaries that occur in everybody's mind.

It is sheer incoherence, which is the natural state of the intelligence in repose. But we must not confuse this state of mind with

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madness, which is systemized under the influence of insane ideas. Thus a young woman in the toils of morbid jealousy subjects realities to the distortions of her morbid mind. Any facts that run counter to her prepossession, she refuses to credit; and with energetic attention fixes her mind on those that confirm it. Passions and partizanship operate as does madness, the characteristic trait of which is that the composition and march of caravans of images, memories and ideas is no longer governed by realities. Madness is the condition of thought when it has become impervious to experience. If you take an insane person out to the middle of a desert, and ask him to judge by his own senses that there is no enemy there to insult or injure him, he will have a brief moment of good sense; but soon you will be beset with his stubborn refusal to admit the reality, to believe his personal experience of the absurdity of his hallucination.

Between the incoherence of the associations of ideas, which is the normal state of thought in repose, and their unbreakable coherence among the insane, lie the associations of ideas directed by the will.

How does intervention of the will occur?

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If you close your eyes, in the silence all about you the incoherent procession of associated ideas passes and passes unremittingly. If at this moment some unexpected sound is heard, as for instance, the supplicatory scratching of the cat at the door, this brusque entry of an external perception into the association of ideas changes its course. Thus it is impossible to continue one's train of thought if there burst suddenly on our ears the strains of martial music; and it is impossible to meditate in a noisy place because the fragile strands that bind our reflections together are broken by the harsh sounds that force themselves on our consciousness.

This violence of interruption which shatters our association of ideas, becomes a liberating force if we make intelligent use of it. Just as we tame the lightning and harness it to our railways so also we may voluntarily draw upon the interruptive force to shatter associations of ideas that embarrass us or to help us to set new associations in train. This draft on an external foreign force, to act in a police capacity on mental associations, constitutes our freedom.

The mechanism which ensures our intel-

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lectual liberty is so important that we must dwell upon it at greater length. Two kinds of cases are to be considered. In one case a certain unfolding of associated ideas bothers or constrains us, and we wish to break the thread and expel the ideas from our mind. In the other case we are holding a sequence of ideas by a slender connecting thread, which threatens to snap at any moment. The images of our ideas are scarcely distinct and we wish to make them firm, clear and lasting.

As an example of a series of ideas of which we wish to rid ourselves, let us suppose that we have an association of ideas which has been released by some painful thought, by that feeling which is intolerable to a proud soul, namely, the sense of an injustice done to us. We find no solace in the thought that our superior, who is responsible for such an act of injustice, is of limited intelligence, that he is of ill-natured disposition, or in the recollection of Plato's argument that it is better to suffer an injustice than to commit one. Nor is there any satisfaction for us in the reflection that almost all persons in positions of authority, because they are heedless and never stop to think, are mere automatons

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set in motion by outside suggestion, for which they are not responsible. Nor are we consoled by the positive conviction that to allow one's peace of mind to be dependent on the opinion of such persons, is a bondage "as abject as that of the subject of a hypnotist." In a word none of the suggestions that occur to the philosophic temper is equal to the task of blotting out the train of troublous associations within us. This is the case because under the influence of acute feeling association of ideas tend, as in madness, to become the stronger the more they are opposed.

What are we to do in such a plight? We must supplant the troublous associations that harass our mind with new impressions. In grave instances nothing is more salutary than to have recourse to some very light manual labor, which prevents the mind from straying idly. Automobile riding is a very efficient counter-irritant for persons who have no particular business to occupy their daily lives. Grave cases can be cured only by a complete change of occupation. This is the one means by which the human consciousness may be laid open to a torrent of new impressions, which will banish burdensome

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ideas, just as when we open the shutters of a room to the sunlight all artificial light in the room ceases to be visible.

Ordinarily we seek the aid of changed impressions to break irritating associations of ideas by having recourse to means always at our disposal. Among these are certain words of our mother tongue, which I have described as "the agglomeration of muscular memories." We may set a new current of thought in motion by saying aloud to ourselves some such phrase as: "I will be master of myself. It is misery to be bound by chains of thought that one is adverse to." Or we may utter aloud some expressions caught up in our reading, which reverberate in the mind and so, as it were, inhale the fragrance and stimulus of "a spiritual bouquet" gathered in the gardens of the great moralists. A still more efficacious remedy is to write, and thus force the associations of ideas to follow the direction of our own choice.

It is the duty of each one of us to learn through personal experience what agencies usually bring on that victorious irruption in our consciousness by which we are freed from tyrannical associations of ideas.

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In previous chapters of this volume we have considered the thoughts and feelings that avail us in the struggle against suggestions of indolence.

The great difficulty, however, is not always to find a means to break the chains of oppressive associations of ideas. In intellectual work the main objective is to keep in the glow of the attention a definite idea, and to make it the center of attraction and of organization. If we find it difficult to define and fix a certain idea, we should have recourse to books on the subject this idea represents. As the child that learns a lesson by heart, we should say aloud significant phrases and utter expressive ideas on the subject. Better still, we should write them. The support afforded our powers of attention in the spoken and written word is the foundation of the note system. Nothing is so helpful to continuity of thought as to be able to summarize it in a few succinct phrases.

The famous Catholic directors of conscience, who have penetrated so deeply into the secrets of the reactions of the soul, realized the necessity of external aids for worship. In truth, the external aids are

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only adjuncts to the internal effort, for which they can not serve as a substitute. They are a necessary adjunct, however, because of the weakness of voluntary attention.

Leibnitz declares himself in his *Systema Theologicum* as follows: "I can not share the belief of those who, under the pretext of adoring in spirit and in truth, cast out of divine worship everything that appeals to the senses and the imagination, for they do not sufficiently reckon with human fallibility. Whoever reflects on the nature of the human mind, as it lies imprisoned in the human body, will readily admit that tho we are able to form ideas within the mind of certain objects that do not come under notice of the senses, we can not nevertheless fix our attention on them, nor grave them deep in our soul without the aid of some external adjuncts . . . and these adjuncts are the more efficacious the more expressive they are in themselves." The Catholic Church has never overlooked the influence of symbolic actions, such as kneeling, crossing oneself with holy water, praying aloud, chants and ceremonies, all of which are symbolistic to the highest degree of knowledge. In order to keep our

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attention fixt in study, we should have a store of stimulating thoughts to sustain the will, remotely comparable to the beads of the rosary, that invention of the genius of St. Dominic, by which means the person at prayer is better able to keep his mind concentrated on his devotions.

The counsel of Nicole, the French moralist and theologian, that we must decline to "lend the ministry of our members to the rambling of the mind," has often served me to good purpose. When my vagabond mind impelled me to move about and consult various books at random, pending the moment of inspiration for work, or else when I felt like taking a glance at the morning newspaper, I simply remained seated at my desk and did not stir a foot. By inhaling deeply and exhaling slowly, I gradually mastered my inconstancy and fidgetiness of mind. At such moments if I sit still and stubborn at my work table, and actually force myself to take pen in hand and begin to write, it is seldom indeed that I do not find my rebellion of spirit against work flee before such external aids toward concentration.

Often, just before I sit down to work, I

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repeat the admirable counsel of Marcus Aurelius: "At every hour, remember earnestly, as a Roman and as a man, that you are to perform the task in hand, in strict and simple seriousness, with heart, with freedom, with justice; and that you are to rid yourself meanwhile of all thoughts foreign to this task. And you will be able to rid yourself of all such thoughts if you perform each task as if it were the last of your life."

Each of us should take note of the external aids that are beneficial to us individually in order that we may have them at call in time of need. But, it must be remembered, that after all, these are only aids to work and that the indispensable need is that energy of will which is confident, and through which we engage in any and all effort with calm determination.

ATTENTION AND SENTIMENT

The third fact to be learned about the attention is that it is an emotional power as is the will. Great powers of attention are caused and sustained by feeling, by some inclination which expresses the deepest sensibility of the individual character. We have

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seen that once a student has experienced the intense joy of creative work, we need have no further concern about his industry. The fire has been kindled within him and it will not die. We shall not dwell upon this point inasmuch as we have devoted a chapter to the feelings that should be the support of attention. In "The Education of the Will," also, there is a chapter of value on the intelligent application of feeling in the formation of the will.

Incidently we must always bear in mind that however adroit we become in the act of bringing attention into action, it remains a delicate and fragile instrument. So we must always deal with it thriftily and never waste it in an effort for which we have not fully prepared the way.

SINGLING OUT DIFFICULTIES

We return now to the fundamental principle that we must do only one thing at a time. We should imitate the practise of the pike in pursuit of its prey. Even if it cross the trail of other prey easier to secure, it does not alter its course, but continues in pursuit of the first objective. Why do we insist on

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this rule? Because the attention requires a clearly defined objective. Do not think that if we focus the attention on two objectives it will divide itself equally. Divided, the force of the attention is zero, and scattered, it ceases to exist.

On one occasion when it was necessary for me to speak to an earnest young woman graduate of the Normal School about certain deficiencies in her work, she confest to me despondently that she was unable to see things accurately and that everything "went round and round before her eyes." I told her that on Monday she should look only at floors and think of them and nothing else; on Tuesday she was to look at ceilings, on another day at side-walls, on the next, at objects hanging on the walls, and so on. She told me later that from the time she practised this exercise of concentration her work became easy.

It is because clearness and simplicity of outline relieve mind tension, that practical means, to which I have on a previous occasion given the name of "maps and atlas," render great service to thought and afford all the advantages of order in ideas as the sub-

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stitute for confusion. The imperative demand of the attention for order and clearness is the foundation also of the great pedagogic law which requires that for the child, as for ourselves, we link the unknown to the known. We do not grasp anything that we do not pre-imagine.

INFLUENCE OF PREPARATION

Because the attention operates, like the light of a lighthouse, by intermittent flashes, it happens that if, for example, we fix our attention on an unknown stretch of territory we scarcely see more at the first glance than if we first saw that landscape in a flash of lightning on a dark night. Gradually, if we have used our eyes methodically, various particular sections appear as on the photographer's plate when it is placed in the developing bath. Then with each additional flash of lightning our perception becomes more comprehensive and more accurate.

Nevertheless, if we had previously studied a photograph or painting of this landscape, at the very first flash of the lightning of the attention our perception would have been

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supplemented and would in consequence be more comprehensive.

Classic examples reveal the fact that the time required to realize the perception of an object, of a phrase, of a figure illuminated for the duration of a second, is much less when the person undergoing the experience looks forward to this or that sort of appearance. He anticipates it in a sense by a bound of the imagination, instead of remaining wholly inactive and just waiting.

On this account, in order to husband the precious powers of attention and to render perception easy, it is useful to prepare sedulously the object of one's study or treatment. For example, before I undertook to write this chapter I went over all my notes and recalled all my personal experiences on the subject of the powers of attention. Then I considered what was worth retaining in this mass of evidence and by a process of elimination secured a residue of essential information on the subject. Then setting myself to work, I "attacked" my subject with all the vigor of my mind, which moved forward to meet the truth half-way, with a pre-imagined outline of the whole question, and, if I may

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say so, it moved in a kind of diffused light comparable to that of dawn which precedes the sunrise. That is what I mean when I urge that we should not lead our attention to the "attack" until we have made adequate preparation.

There is one other important consideration. When we make intense efforts of attention, that "prayer of the soul to the truth" may not be heard; or, to resume our earlier metaphor, if our "attack" fails, this failure can, in many cases, be remedied by a few added moments of perseverance. We have previously cited by way of example the capitulation of Metz. If the capitulation had been set for one day later, if the second army had arrived one day later before Orleans Wood, the Germans would have raised the siege of Paris. At Port Arthur if the Russian fleet had held out for five minutes longer the Japanese fleet would have retired, for it had exhausted its ammunition.

The same law of perseverance holds in the battle for truth. In my own experience I have often remarked that important progress rewards my extended effort when, despite heavy fatigue, I toil a little while longer. If

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I had yielded to the feeling of fatigue I should have left my task without its natural compensation. Instead I should have had the feeling that I had not made any real progress. I should have been obliged to begin all over again under less favorable conditions and therefore with fewer chances of success.

It is plain, therefore, that we must study thoroughly the conditions which produce frequent and energetic attention. Then, before we set ourselves actually to our task, we must prepare the way with minute care, even to the smallest detail. This is possible only when our minds are completely free from all thoughts unrelated to our task so that we avoid any division of energy.

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II

MEMORY

EDUCATORS have followed the same course of procedure as wasteful tillers of the soil in taking nature as she is, with all her prodigality. The routine of land cultivation is followed without reflection, and the results are rather worse than better. The earliest comers, the foresters, surveyed the forests and cut down certain trees in too thickly wooded sections, in order that others might prosper. They allowed only the finest trees to remain and cared wisely for them, with the result that their forests consist of splendid specimens of trees rising like columns toward the heavens and suggesting the pillars of majestic cathedrals. The more prudent farmers, after sundry experiments, adopted two methods of wheat cultivation which increased their returns tenfold. First they selected for planting purposes the choicest grains from the fields of heaviest yield; and, secondly, they sowed

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the seed at widely spaced intervals to permit root expansion. . . .

The farmers who do not follow this economical and profitable system of planting have the birds, insects, natural decay and frost to help them in thinning out seeds that are too thickly sown; but we can not defend any such defective and fortuitous method when there is question of planting the seeds of memory. The memory of a college graduate is a hopeless tangle in which a multitude of reproductive recollections prevent thoughts and ideas of value from expanding in vigorous growth.

There is no process of selection at the portal of such a memory. Indeed, in the memory of every one of us, recollections multiply rapidly from inaccurate perceptions. Erroneous ideas thrive in our minds because we learn a great number of words before we have carefully studied the things they designate. Moreover, because we do not exercise our critical sense, we confuse the diverse meanings of words that have some affinity. A more serious error of which we are guilty is to substitute words for objects.

It would be impossible to estimate the size,

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and contents of the mass of confused ideas, lies and sophisms that slowly seep into even well-ordered minds through reading and conversation. Facts, ideas, opinions of whose origin we know nothing are installed in our mind and like the bird that finds a cuckoo's eggs in its nest and hatches them, we adopt these beliefs, wholly unsuspicious of their dangerous possibilities.

For example, a great many persons believe that free spending is helpful to trade because they see the results of spending; but such persons fail to appreciate the very much greater benefits that result from money employed in sustaining and stimulating energy of production. We speak offhand of young nations and of old, and therefore decadent, nations. The distinction is an absurd one because all nations, young and old, are made up of individuals of all ages; and nations are decadent only through the failure of their governments to make proper use of citizens of vigorous intelligence and energetic will.

Men in the learned professions often suffer themselves to be obstructed by false ideas of which they can not rid themselves. In the field

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of medicine and sociology there are hosts of accepted ideas which are stumbling-blocks to many. In the field of philosophy we find the soil very favorable to words without meaning, such as "soul" and "free will," and it has been said, not without a modicum of justice, that metaphysics is "a malady of words." Even on the subject of memory, which we are considering, for a long time old fixt opinions stood in the way of the discovery of the complexity of the slightest recollection—the recollection of a word, for instance, which I shall explain presently.

In politics most of the words that dwell in the brains of the voters should be re-analyzed and cleansed of alloy. Nearly all of them are instinct with a sense of hatred or with illusion. The tragic follies of the Russian revolution constitute a gigantic experiment proving what terrible danger is involved in the belief that men are wise and intelligent, when really the majority is made up of individuals who are weak-minded, ignorant, undisciplined, violent and envious.

It might be hazarded that the brain of a man of the twentieth century is inferior in seed-thought to the brain of a man of the

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same class of the seventeenth century, because in our over-hurried life and in our incapacity for sustained, calm, persevering effort we are not so watchful over the portals of memory of our children. A well-cultivated memory presupposes selective reading. The seed to be sowed in such a memory must be carefully chosen, and this choice requires refined sensibility and acute critical perception, which means a sense of that which is right and efficacious.

No idea should be allowed to lodge in the memory which is tainted with vanity, hatred, jealousy, fear, covetousness or prejudice. Ideas of mere ungoverned impulse, incapable of sustained examination, and ideas of frivolity also should be barred. Only such facts should be stored in the memory as have passed through the crucible of experience, and have been thoroughly settled in meditation. There must be neither too great precipitation nor too great resistance: this in itself is the formula of a free mind, since by a free mind is presupposed ability to control passion and prejudice and calmly to wait for the discovery of truth. Truth is a reward which we earn

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through conscientious work and persevering attention.

LOSSES THROUGH USELESS LEARNING

It is unfortunate, but true, that memory, which is the daughter of mental freedom, and should be a powerful aid to our will, only too often becomes a source of mental serfdom. Minute by minute, memory makes record of our perceptions, of our hasty conclusions, of what we read, think and do. But if we do not make a definite and deliberate choice among the matters stored in our memory, a choice is made for us quite beyond our inclination of will. By this I mean that recollections bound up with the lively energy of some particular tendency take on additional strength. Now, in youth especially, the dominating tendencies more often than not are those we should struggle against daily in order to secure our freedom of mind. It is not astonishing, therefore, that the memory of so many persons is encumbered with sensual images and recollections; and, what is more, that so many young people, who ignore the rigorous exactitude of the Incorruptible Accountant,

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provide for his record only idle reveries, evil or profitless conversation and reading, so that one fine day they find themselves incompetent and ill-equipped for the struggle in which they must fail because of their lack of preparedness.

But we are not studying memory from the standpoint of the education of the will. Let us be mindful only that, if we do not take the management of our memory in hand, the decay of the will is inevitable. Inevitable also is the decay of the intelligence.

It has been stated above that even the healthiest memories are encumbered with valueless recollections. How could it be otherwise? In our childhood how many unreasonable and futile conversations have we not heard, and how many trifling and worthless books have we not read?

As we advance in years, our brain is overloaded with an encyclopedia of ill-digested ideas—because of the lack of correct educational methods—and if we forget any of these ill-digested ideas it is by mere accident. I am startled when I recall the vast amount of pseudo-knowledge my instructors sought to pound into my youthful memory. To-

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day, all I can remember of the entire impedimenta are certain fragments and quotations, useful only for such conversations as require neither depth nor exactitude. If each of us were to draw up an honest balance of the assets he possesses from his school and college days, the sum total would prove surprizing.

Incidentally I may say that my annual acquaintance with theses offered in qualification for the bachelor's degree convinces me more and more of the prodigious inefficiency of our encyclopedic system of instruction. Only a general blindness on this point, due to the force of accustomed routine, prevents a majority of thinking men from rising in protest against such a wasteful method. But the harm is done as far as the persons to whom I am addressing this book are concerned; and it were futile for them to reject the past, which can not be altered. They should fix their gaze on the present and resolve within themselves to respect the laws of memory. No one may violate them with impunity; and they must be learned and followed along well-designed plans. By this I mean that the laws of memory must not be cultivated in hap-

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hazard fashion or according to the unintelligent traditions that impede intellectual effort.

The ills we have suffered in our educational years are many. Therefore we must take heed lest we increase their number that they become so great as to be beyond correction, and instead of having a memory in our favor, we have a memory inimical to us. The misfortune of such an accumulation of pseudo-knowledge is, as Malebranche points out, that "when a man's mind is filled and content with the imitations of learning and also swollen with pride, he is contemptuous of the labor of attention. . . . If he have not the hunger for truth, he can not fix his determination to earn in the sweat of his brow the bread of the soul."

NUMBER OF THINGS KNOWN UNIMPORTANT

To organize our memory properly persevering efforts of attention are required, for the point of chief importance is to be able to lay hold of what we know at the moment we need it. However copious our store of things known, it is of small use to us if we can not quickly draw on the depths of memory for our needs in time of action. At the battle of

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Wagram victory was won by a handful of brave soldiers, for 13,000 cowards feigned death rather than fight. The recollections that count are those that do not feign death, but obey the command to fight. Montaigne probably had such wideawake recollections in mind when by way of contrast he spoke of "bloated and puffy minds." But we must not imitate *Gargantua*, who was the victim of a stupid instructor, and who knew his lesson so well that "at his examination he recited it backward."

We would better follow the method of the Alpine climber and limit our equipment to the minimum; and then throw away half of what remains. Too great a mass of detail is hurtful to thorough culture. We must pick and choose and deliberately shape our memory to become an instrument of convenience and practicability.

The brain has 600,000,000 cells, but nevertheless, it is not capable of unlimited acquisitions. The Chinese language has 40,000 characters and consequently is an impossible burden even for persons of ample brain capacity. A naturalist must study and observe for a lifetime in order to know three

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of four thousand species of plants and no one man can know the 200,000 kinds of flowering plants, nor the 600,000 kinds of the animal species. Even if it were possible to acquire it, such knowledge would be absurd, for it would overwhelm the intelligence.

We must learn to limit our scope of knowledge so that we do not bury our minds in a mass of acquired recollections. We must aspire to learn the essential things and to retain only such thoughts as have bearing on the profound substantiality of things. Masses of detail information may be safely left in books and note-books. Let us sweep them out of our mind where only memories of high value should be treasured. To these memories we must devote an intensity that gives them fixity in our mind.

SLOW GROWTH OF IDEAS OF VALUE

Valuable ideas, it should be noted, do not customarily impress one at the first glance. They grow slowly and deliberately in their impression, while always becoming stronger and more striking. This process requires calm and time. The idea of value may be compared to a plant that requires time to spread

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its roots widely, in order to secure a sufficient supply of nourishing juices from the earth. We may even say that an idea does not acquire its full vigor until it draws upon the sap of some fundamental tendency. Feverish haste in our method, or the scattering of the attention on several ideas makes such a nourishing process impossible.

By way of illustration I may tell you that for years I was puzzled to find a satisfactory explanation for the rapid decadence of the civilization of ancient Greece and Rome. The accepted reason advanced in histories is, that decay ensued on the accumulation of great wealth and the consequent lowering of the standard of human character. This is not cause sufficient in itself to my mind, for it does not show the like result in modern history.

The problem was not solved for me until I beheld the collapse of Russia. Then I perceived the full significance of the fact that proscriptions in Athens and Rome had made men of character and personality an extinct species. It was the extinction of minds that could not stoop to low cunning. This disappearance of the higher grades of intelli-

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gence was the underlying cause of the decadence of the ancient democracies which became barren as a desert.

To the same cause also we may trace the downfall of Spain. This country was alive and flourishing when the Moors, Jews and Catholics competed under the conditions of liberty before the advent of the sinister Philip II. (In less than two centuries the population of Spain fell from thirty millions to seven.) The Inquisition took off the cream of the finest minds of Spain. The Spanish Jews were exiled, the Moors were chased to Africa, and harsh Germanic Cæsarism completed the ruin of the Iberian genius.

As we were saying, the collapse of the Russian Empire may be ascribed to the same cause. Under the Czarist régime there was a systematic destruction of all men of character and of all minds of vigor. So it came to pass, under a few months of the Maximalist domination, with its tocsin of hate and envy, that all such were murdered whom the previous despotism had not exterminated.

Here in France the like danger is not so great, yet, because of a defective electoral system, we must have trepidation about the

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future lest men of character be too often thrust aside from the higher functions of our political and administrative economy. We have risked disaster for want of men of mind and energy who do not chicane with the realities of politics.

This perennial thought has become more dominant in my mind by the emphasis of actual instances. As I see it, there is but one criterion by which to judge the head of a government, which is: Does he do all that in his power lies to discover men of initiative, uprightness and energy to be in charge of his chief departments? That is the essential adequacy of governmental direction. If he does not so acquit himself of the responsibilities of his office, the result is a public misfortune and the country is on the road to catastrophe.

We have seen that an idea must grow in the mind for years in order to attain vigor and influence. It must have time to spread its roots; and it is doomed to impotence and sterility if the attention is constantly distracted by the incursion of other ideas. The very laws of memory draw us up sharply to

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our capital principle: one thing at a time and that one thing to its depths.

A single impression is not sufficient to fix the memory of even the most simple fact. In time this impression becomes blurred and, as it were, covered with rust like a piece of iron. The impression of the fact loses its brilliance and sharpness of outline until gradually its form disappears completely. Consider, for instance, what remains of your impression of the sight of a mountain that struck your gaze with wonder. Try to make a sketch of this mountain, and you will be amazed at the poverty and inexactness of your impression. The same is true of the first reading of some book which is a masterpiece.

It may be averred, therefore, that any single impression is always insufficient. We must frequently recall our acute attention to the fact or the chapter of a book which we wish to keep fixt in our memory . . . As it is necessary that we recall frequently the impressions of facts, so it is of equal necessity that we confine our attention to essential facts, and that we make record of them in plainly readable notes which may be referred

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to often in our moments of solitude. In such form I had record of the "Meditations" of Descartes, of the important chapters of the Philosophy of Sir William Hamilton, the Logic of John Stuart Mill and of the essentials of the Psychology of Herbert Spencer, with the result that after thirty years my recollections of these authors on these subjects are still clear.

So it is evident that the necessity of refreshing our memory on essential facts is a matter of nutrition. Our nervous forces naturally tend to revert to their normal status, so that we must, by frequent repetition, incorporate memories in them in such fashion that they can not be effaced. All physical and mental conditions cooperate or conflict with the fixation of the memory. The requirement of a healthy circulation of the blood as well as the necessity of frequent and intense exercise of the attention are denied us if we indulge in long hours of pseudo-effort and lazy reading, which impede and impoverish our circulatory and breathing systems. Brain-workers, who have no means of diversion in manual effort, do not know how to pass their leisure hours and acquire the habit of long

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sittings over books or reviews, which is the continuance of the practise of spending hours without moving that they learned in their student days.

Such stagnation depletes our energies and spoils our speed and reach of mind. As soon as we feel that our mental energy is slackening, we should quit our study for some effort in manual toil. Such a change improves our intellectual powers.

To sum up, we must do one thing at a time, refrain from scattering our attention, desist from lazy hours of pseudo-effort that render our blood stagnant, so that when we do study we have our attention all alive, alert and constant.

CAPITAL IMPORTANCE OF WORDS

We can not think without the aid of words, which are of invaluable service to us; but our disinclination to exert ourselves is such that we throw ourselves in full dependence on them heedless of the moving realities of which they are the symbols. In his "Experimental Science" Claude Bernard says justly that even in the sciences, language is only an approximation, for if one overlooks the phenom-

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enon of vision to depend wholly on words, one very soon strays away from reality. The word *memory* prevents us from consideration of the fact that there is no such thing as *memory,* but *memories,* or to say better, there are only *recollections.* Each recollection has, so to speak, its individuality and is probably bound up with special elements of the nervous system. So it follows that a certain recollection is more readily at our disposal if it be less isolated and more closely related to other recollections. Thus the recollection of words is marvellously tractable because it is solidly imbedded in four different cells of the memory. To explain: I hear a word—that is my auditory recollection; I see a word written—that is my visual recollection; I write a word—that is my graphic recollection; I pronounce a word—that is my articulate recollection.

Such recollections are separate, for we may lose one through illness and the others remain unaffected. What is more, several of these recollections possess the considerable advantage of containing muscular elements which we can re-evoke with ease. Thus, I can pronounce a word, I can write it, and I can read it mentally by a movement of the eyes. These

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muscular movements which correspond to words are so usual and familiar and they have become perfect and of such high sensitivity that we need only the mere inclination toward the movements in order to think. For example it has been proved through cases of aphasia that you do not understand an orator except by repeating his discourse as he utters it. Likewise, reader, you understand what I have written here only by pronouncing what you read. Yet this muscular repetition is so delicate and slight that we ourselves do not notice it, and to reveal it we must call in the aid of scientific instruments.

Because of the existence of these muscular elements, so docile to our will, words should be the chief means of our mental liberation. Indeed, we can put this control over our associations of ideas either to protract them or to cut them short, as we will.

It is for this reason that profound Catholic psychologists advise refuge in reading, in oral prayer or in the recitation of a psalm when the spirit is agitated by vague, useless or pernicious thoughts. The introduction of the controlling factor of words into vagrant associations of ideas leads the spirit to fortify

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itself little by little with meanings suggested by words, and so our thoughts find themselves, despite themselves, guided along the right path.

Likewise words afford us an almost infallible medium to re-evoke our recollections and stabilize them. We are able to re-evoke them because through the muscular elements employed we hold them at our disposal, and we are able also to re-evoke the recollections they connote. We are able to stabilize them because they are fixt in our memory by the four roots of the muscular elements, and so are immune to forgetfulness; and when we have the words at our disposal we have at the same time the chain of which they are the first link.

The connection established through the four roots of words was discovered by psychological research, yet neglected for a long time in our system of elementary education. When I learned to realize the intelligent use of the basic cooperation of the four root recollections of the word, I proposed the abolition of the absurd system of dictation in the teaching of spelling. The teaching of spelling should be restrictive in the sense that it confine it-

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self to fixing correctly in the mind the four roots of memory attaching to a newly introduced word. It is easy then to invent means by which a child re-evokes as often as needed the four images—visual, auditory, graphic and articulate. By this method children learn spelling without trouble and they never forget what they have so learned.

VALUE OF ASSOCIATED IDEAS

On this point it is to be noted that whenever we can, we should so dispose of things remembered that all which bear on one particular subject lend one another mutual aid. Every isolated recollection is difficult to draw upon because of its lack of relationship with some other recollection. This is why a proper name, remembered solely as a name, is difficult to recall when it is needed. A thing remembered is always better fixt in our memory and more easily summoned to mind when it is related to one or more other things remembered.

This is a law of capital importance in education. Consider, for example, the translation of a passage from Cæsar. We should follow the march of his army on the map of

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Gaul and make a sketch of his progress. We should verify the meaning of ancient technical expressions in our memory and draw sketches of the objects described. As the result of having made many sketches of the Battle of Alesia and the operations of Cæsar in the neighborhood of this place, I have an indelible impression of the pages of Cæsar's "Commentaries" treating of this decisive conflict. Also, when on a railway journey I saw from the train the massive statue of Vercingétorix on a hill, all my recollections of Cæsar's great book came back to my mind in clear and precise lines.

Suppose we view some piece of woven cloth under a microscope? We should immediately make a sketch of what we have seen and then compare our drawing with an illustration of the same object. Then we should make such corrections in our own drawing as are necessary and write a short description under it, enlivened by some apt comparison or striking image.

Any study of geography should be rendered concrete by the accompaniment of rough drawings made from memory, and then rectified. The contour of each country, the limits

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of each body of water should be compared with the corresponding features of the map of France. We have a clearer idea of the Mississippi when we realize that, with its tributary, the Missouri River, it reaches six times farther than the distance from Dunkirk to Perpignan; and yet it is not so long as the Nile. The proportions of the geographical extent of France should be made familiar to us in childhood.

Similarly, geometry, which we teach in an abstract and unattractive manner, should be linked up with carpentry and cabinet work, and with surveying, by diagrams showing the measurements of land, the height of a tree, a belfry, a hill, etc.

The cooperative movement of our recollections has more than the resource of words, writing, drawing and manual effort, because every idea that we keep in our mind becomes a centre of organization. It spreads out roots to enrich itself with memories, observations, personal experiences, comparisons and images that combine to make up its entirety.

In considering the importance of the cooperative aid afforded by recollections we have seen various proofs of it, as in the very

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characteristic fourfold memory attaching to words. The development of this cooperation is possible only in a calm state of mind, undisturbed by haste or scattering thoughts. We should always put the cooperation of recollections at the service of ideas of value. In this matter scientific studies enjoy an advantage in the possession of the laboratory where the required manual effort compels leisurely reflection. In the laboratory thought is conjoined to action in the process of experimentation, and so the attention is held steady, just as ceremonies, hymns and religious rites sustain the fervor of mystical souls.

In every study undertaken we should seek out the means of cooperative mental effort. The cooperation of recollections in the study of an illness includes observation at the bedside of patients, notation of symptoms, control and discussion of them.

In the abstract subject of law cooperation implies pursuit into the realm of practicality, of the consequences of a statute, which deeply affects those who suffer from its inadequacy or its rigor. No one can thoroughly understand a law or administrative regulation until the results of its action on the lives of the

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persons subject to it are ascertained. It is precisely because the effects of a law are too remote to be perceived by law-givers and law-makers that centralization of authority produces so many unhappy consequences and laws proceeding from the center of government so often are found impossible to enforce. A lawyer who hears the experiences of his clients acquires a full knowledge of law, something he by no means possest when he obtained his degree.

Then again, our knowledge of history is more firmly grounded when it is closely knit with the knowledge of geography, which in part explains the course of events. By way of illustration, I may point out that the history of England and her hesitation to take part in the great war of 1914 is explained partly by England's island situation.

Even in literature cooperative mental effort should be practised. In my observation of scholars I have found that they remember better the development of sensuality in the Roman Emperor Nero, or avarice in Molière's *Harpagon,* when their attention is called to the study of some other vice such as alcoholism; and they see how it gradually

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destroys all the moral resistance provided in the sense of personal dignity, love of family, etc. Inversely, when they study psychology, classic examples afford them a model on which to base analyses of motives and feelings. If our cultural methods were not so superficial it would be possible for scholars to have an implicit knowledge of psychology, logic and morals at the very outset of their course in philosophy.

Once more, therefore, as we come to the conclusion of our examination of the usefulness of recollections in cooperative mental effort, we realize the inefficiency of hurried study, that moves by jumps and only skims the surface of things. No harvest ripens without the aid of time. All the information we have acquired about efficient production convinces us over and over again that we must do only one thing at a time, do it with all our might and without hurry, so that we store our minds with the rich treasure of sustaining recollections.

NECESSITY OF ORDER

Another rule for making our recollections fast is the rule of order. The systematizing

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of our knowledge is of higher importance than the mere acquisition of it, for confused and disordered knowledge overburdens the mind and dooms our efforts to barrenness, which is discouraging. If we have the habit of order in our daily life we avoid loss of time and loss of nervous energy through hurry. It always happens when we are in a hurry that we are unable to find the things we have neglected to put in their proper place. The case is more serious when, in search of some acquisition of memory, we have to struggle to find the needed recollection we have failed to put in its category.

In all books on psychology we encounter sections devoted to the necessity of order. But we never come across instructions on what constitutes a memory in which things are in their proper place.

A memory is not like a great department store, such as the *Bon Marché*, where anything may be procured. In the *Bon Marché* each department is directed by a competent manager. Now in the matter of our memory we are the sole and individual manager and our capacities are limited. If we wish to make a great bazaar of our memory, which shall con-

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tain everything, we shall discover that we overlook many things and that the quality of our stock of recollections leaves much to be desired. In my student days they tried to make a universal bazaar out of my memory. To-day when I have need of a particular recollection in chemistry, the natural sciences, history, or geography, it seems to me often that my memory might be compared to those nuts that look so good on the outside, but which when broken are found to contain only dust and decay. It is the height of absurdity to aim at making a universal bazaar of one's memory.

But, it will be asked, in what does a well-organized, well-ordered memory consist? There is only one possible answer to this question. A well-organized, well-ordered memory is the memory of a modest learner who realizes that to attempt omniscience is to prefer pseudo-intelligence for culture that is profound and real. He does not seek the vainglory of universal erudition, nor fatuous satisfaction in dazzling dull minds. He is ambitious only to give to certain directive hypotheses or ideas, which seem essential to him, an organic power. This organic power

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is the mysterious force such as resides in the acorn through which it becomes an oak when it has been planted in the ground and has had sufficient time to assimilate the elements of earth, water, sun and air which are of the same nature as the acorn itself.

An ideal condition would be to have the memory organized as are the flora, among which secondary specimens are classified according to the dominating specimens on which they are dependent. This fundamental system of order enables the mind to move at ease amid the otherwise impenetrable mass of the hundreds of thousands of flowering plants. Unfortunately, all natural classification is impossible outside the sciences. The best we can do in the field of study is to approach as nearly as possible to natural classifications and to organize the memory under the hierarchy of essential ideas.

ESSENTIAL IDEAS

What is an essential idea? In answering this question we touch the very foundations of education. In colleges this question is merely set up for general consumption and reaches no one in particular. A professor in

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charge of a class of a large number of students, to whom he gives instruction several hours in each week during a course of nine months, is not capable of ascertaining their deeper tendencies and consequently can not know what are the essential ideas, the vital ideas of each member of his class.

On the other hand, the studious person, during his hours of silent meditation is able to question himself and take cognizance of his desires and tendencies. We keep in mind, to say it briefly, only the things that interest us. Just as great mountain chains give its configuration to the land in which they lie, its streams of water, its lines of communication, and, to a degree, its history, so also our fundamental tendencies fix the structure and physiognomy of our memory. Every memory is individual, has the color of our feelings and is conditioned by our constitution and our inclinations. Therefore let us have the perseverance to realize ourselves in our memory by patiently storing our energies in it as steadily as they rise from the depths of our being. Then we shall see our instincts develop into faculties, just as a wood fire, which at first is merely smoke, gradually becomes

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a mass of flame through the cooperative blaze of multiple tiny flames and so gives out heat.

If my memory of sight is rich I shall have brilliant recollections of color, and, as a painter, would no doubt be able to produce autumn landscapes of delicate shadings. If my muscular memory is strong I should reveal abundant variety of line and action. A musician of great aural memory should be able to remember whole symphonies of Berlioz or of Beethoven. A sensuous poet, like Alfred de Musset, will have a brain dominated by the imagery of love. A lover of nature will have a mind stored with plenteous variety of beautiful landscapes. A Corneille, heroic and sincere, will nourish his mind on the lives of the heroes of antiquity, while La Fontaine, who is so fond of animals, knows and remembers all their traits and habits. A person of religious spirit, like Bossuet, will have an imagination overflowing with Biblical images.

The organic structure of the memory is not modelled solely by predispositions and the deeper tendencies, but also by the characteristics of the will. By persons of impul-

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sive will such a hodgepodge of memories is hastily absorbed without due scrutiny that their mind becomes laden with errors and prejudices. Persons of careless mind gather only half-impressions and fragments of knowledge that are of no utility. On the other hand, it is to be noted that a calm and patient will can organize will-power so thoroughly on the basis of certain strong and directive ideas that it is in constant touch with the permanent sources of feeling. Every person of intelligence will proceed not only along the line of least resistance, but also along that line on which he is borne by the current of his profounder tendencies. . . .

CONCENTRATION THE REAL POWER

It is necessary therefore that we take account of our personality, which of necessity lends its color to our recollections; and by this I mean to say that we should love the work we are doing, for it is a misapplication of our energy to undertake any responsibility which goes against the grain.

Nevertheless we find an objection forthcoming. This objection is that an ordered

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memory, such as we have defined, is a memory incomplete and limited. This objection presupposes that a universal memory is within human power. Let us give up the idea that we can know everything. On this point I may recall the remark of the Geneva professor of law who said to d'Alembert, the famous French philosopher and mathematician, when they were discussing Voltaire, that law was the only subject on which he found Voltaire insufficiently informed. "And I," replied d'Alembert, "found Voltaire ill-informed only about geometry."

Because of the marvellous growth of human knowledge, universality of mind is impossible. We must not look to Pasteur for an opinion on the symphonies of Beethoven or on the pictures of Saint Genevieve painted by Puvis de Chavannes. Similarly we do not expect an expert opinion on higher mathematics from Claude Bernard. Only journalists are expected to know everything, and they, fortunately, have the encyclopedia to call upon for assistance.

Moreover, persons who really toil manfully with their brains can be happy even if they are only demi-savants or one-tenth

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part savants, for once they reach the depths of one branch of knowledge, even tho they have not done more than attain to an outlook on reality, it gives them the contact of reality and they acquire an especial divining power about the eternal order of things. Thus they are able to understand the discoveries of other investigators even when they are only half explained, and nothing in the universe remains wholly foreign to them. A savant worthy of the name can not be limited by the confined mentality of the specialist. "Specialist" is the rather damaging description of a learned person of limited range, who is a stranger even to the profounder ideas of his own special science, and who is therefore incapable of intuitive sympathy for the whole run of human knowledge.

Let us never be worried that we must limit our scope of knowledge, for universality is a synonym of dispersion, and therefore of mediocrity. Even if there are many things we do not know, we can not be charged therefore with being half-learned, for half-learning is a term used to ridicule only pre-

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sumptuous ignorance. Dispersion and mediocrity imply feebleness of mind.

Strength of mind does not mean that we fling the strictly proportioned energy of the brain wildly to the four winds, but that, on the contrary, we conserve and concentrate this energy. A happy life has been defined as the ideal of youth realized in mature years. Those persons may indeed be said to be happy who at about their twenty-seventh year have discovered that idea of great fertility which thirty years of toil will transform into a work of lasting influence. I use the word "work" intensively, in speaking of a writer or a savant, because the productions of a mind that thinks and acts are merely successive approximations to a unique truth, the richness and fertility of which become manifest only little by little and as the result of toil and meditation.

A well-ordered memory is very different from a memory running at haphazard. A well-ordered memory is the creation of the will, as carefully designed and constructed as a garden organized by the genius of Le Nôtre, where every element is so disposed

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as to make the beauty of nature apparent and understood.

VALUE OF FORGETTING

It is a fortunate thing for us that an immense number of observed matters lie forever lost in an oblivion of the mind, because if we remembered everything we should have an over-burdened mind made up of a mass of indistinguishable details. Thus it is that when we learn a certain passage by heart, this passage remains a solid block in our mind; and it is difficult to isolate one thought or one phrase that goes to form the whole.

A memory that grasps and holds too many things really militates against a high development of talent, because it encumbers the mind with so much lumber. In order to avoid this mistake, we must cultivate our energies to pick and choose with nice selective power among the facts and thoughts to be admitted into our mind. This is not to say that we should hope to find ourselves possest of a defective memory, of which Montaigne complains when he says that, "it takes me three hours to learn three

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lines of verse." But the advantage of having a memory that does not retain objects too easily is that the memory of a man of superior mind is the creation of his will. All the elements of his mind should cooperate toward the same end and produce a full and joint result. Whatever does not help to this end, impedes it, and therefore should be eliminated.

It is our duty therefore to build up a memory that is all our own, organized like a well-disciplined army, which is not only absolutely subject to our will but which is able even to anticipate our orders, because it divines and foresees them through entire sympathy with our deepest desires. To obtain such a memory we must, as has been said, resolve from the very beginning to make a selective choice of things to be remembered, and to reject utterly all facts and thoughts of indifferent or inconsequential character. The very power I possess to forget things confers upon me the ability to create my memory. Forgetfulness, which is the terror of the erudite, who, as Malebranche says, "transform their heads into a library of dictionaries," is the power

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which liberates us from the servitude of chance. But it is to be remarked that there is a false and capricious kind of forgetfulness, which does us harm, because it interferes with memory at haphazard. The forgetfulness to be desired is that which is subject to our will, and of good influence because it is the instrument of our intellectual liberty. It is by the adroit management of this kind of forgetfulness that we can bring our personality into full flower, just as with a mallet and chisel a sculptor releases from a crude mass of stone the figure which radiates life and thought.

HOW TO BE MASTER OF ONE'S MEMORY

How shall we make intelligent use of this power of forgetfulness in order to create that great work of art which is a well-organized memory? If this ability to forget is undisciplined and left to its own devices it can do naught but harm to us, but if it is subject to obedience it frees our mind from all disorder and incoherence.

The intensity of an impression and its repetition are the indispensable conditions to impress a recollection in the memory.

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Now we are the masters of these two conditions. We can regulate and choose among the impressions that seek admission to our memory and either accord or refuse such admission.

In fact, there are two attitudes of the attention. One is the attitude of distrust —that is, attention is on its guard. When I read a book about which I am in utter ignorance, my attention progresses through the contents of this book in a manner similar to that with which my feet move as I cross a perilous bridge of snow on the crevasse of a glacier. To put it plainly, my feet do not take all my weight upon them. I do not walk ahead freely and deliberately. In the like manner when I read such a book as I have mentioned, I give to it only part of my mental energy. The result is that the impression left by this book in my memory is so slight that within a few hours it has faded out. At times also it happens that when I read the newspaper, I completely forget what I have read within a few minutes after reading it. The greater number of empty conversations, of fruitless observation and reading,

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vanish from the memory as fog disappears before the sun. Even when some ingenious remark sharply captures my attention I am bound to forget it also, unless I intentionally call it back to mind.

Thus I acquired the precious faculty of voluntary forgetfulness which I suggest that people cultivate as early in life as possible. Will-power and habit are the two sole requisites for its acquirement. Through this faculty we are able to decline to remember anything and everything at first observation and in consequence our memory is not burdened with random recollections. All I hear, all I see, all I read, slips into oblivion if I do not retain it by an emphatic act of attention, and therefore of attention governed by will-power. If I do not exercise this willed attention I can read without remembering anything of what I have read. Nevertheless one disadvantage of this practise is that we risk re-reading a book of which we have no recollection. On occasion I have bought for the second time a book whose title interested me, but which I found I had read. In order to avoid this minor mishap it is sufficient to tear off the cover of the book and file it be-

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fore throwing the book into the waste basket. Often I re-read a novel or a play without having any remembrance of my first impressions of the book.

Once we have acquired the habit of voluntary forgetfulness, in order to keep something in mind we must decisively will to retain it and give redoubled attention to the subject. All we do not retain by this fixt effort of the attention passes out of the mind.

We save a great deal of nervous force in the process because we retain only that which truly interests us, namely, only the observations and experiences of value aimed at the seven or eight organized objectives in our brain.

But it will be said that this method allows of great gaps of knowledge and of ignorance about very many things. This is true, yet it must be noted that, however we strive, we shall never be anything but partly informed on many subjects and wholly ignorant of many others. We are subject to the limitations of time and of our nervous energy. The question to be decided is what course we purpose to follow in life. We must choose between dazzling the uninformed by our abil-

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ity to write and talk about everything, without knowing anything; or, we must decide to attain to real achievement. The greatest achievement of all is to make the best of ourselves, to be a physician, a lawyer, a professor, a business man, a farmer, or what not, who is at the same time a person of lively and alert mind and possessing a memory richly stored with all the treasures the best minds have acquired in our line of effort. Thus we shall be among those whose opinion is held valuable. But we shall not take rank of this character unless we are intelligent enough to understand that our strength is subject to strict limitations, and that if we waste it, we shall have only a mediocre knowledge about everything, a kind of encyclopedic memory for superficial conversation. Only those who know how to concentrate succeed in making the most of themselves and in attaining to real achievement.

It behooves us, therefore, to employ voluntary forgetfulness with resoluteness and persistence so that we have a memory concentrated on our work, on our impressions, and on our deeper tendencies. By coordinated effort during the fifteen years that fol-

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low one's eighteenth year, one is able to gather rich and savorous fruit for the autumn of life. The reward of such effort is that we are able to discuss subjects weightily, while men of encyclopedic mind may be compared to those beautiful double-blossom flowers which yield no fruit. Such are brilliant talkers, brilliant journalists, brilliant orators, who dazzle for an instant and then disappear in the night without having added anything to the common store of thought, of feeling, of human discovery.

We shall acquire such a memory as we will and deserve to possess. At birth we are possest only of possibilities; and most people die without having realized their possibilities. They have the appearance of being real persons, but if we examine them closely we find that they are merely a motley bundle of sensations, perceptions, feelings and contradictory tendencies. A photographic proof of their character would be neither positive nor negative, but indistinct, vague and nebulous. They are no more responsible for the harm they do than for the good they do, for in each case they have been subjected to influences without any choice on their part.

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A photographic proof of their memory would defy examination because of its disorder and complexity, for their ideas choke one another like rank undergrowth in a jungle. If some appearance of order seems to be there, it is not due to their will-power but to some emotional cause, such as sensuality, avarice or senile hunger for power which has put some little order amid chaos.

A man who has courage and pride should never yield to the haphazard, to the chaotic, or to irresolution, which is to say to impotence. No more should he accept the unification of effort proceeding from some overwhelming passion, which is destructive of liberty. He should ponder long and discover the greater and deeper currents of his energy. These currents form permanent tendencies which are the only ones that can powerfully influence will-power and the attention. We must sincerely record what we like to do, what we study with pleasure and what we are interested in keenly. Little by little we shall discover our tastes with certainty, and we shall know the work of which we are capable, for there is no surer means of

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failing in life than by going counter to one's tendencies.

It should be the dominant concern of parents and teachers to note, as the years go by, what are the tastes and preferences of the child and the nature of his feelings, for great thoughts come from the heart.

How many there are who have passed a dismal life because they were too trifling and careless in making their choice of occupation. Their occupation does not harmonize either with their deeper desires or their aptitudes, and in consequence their work never satisfies them. On the other hand, when we are engaged in work that we like, we are carried along by it as a ship is sped along the waves by a favoring wind. Therefore we must hearken to the inner call of our inclinations, nor follow the career of an explorer, if as a child we have been quiet and serene, no more than we should devote ourselves to office work if we are of an adventurous and hardy nature. If we have poor eyesight and an impatient temperament we are not fitted to paint miniatures.

From the moment we have learned to realize why we were born we must be modest

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and docile with the realities of life. One essential reality is, that the memory is not possest of unlimited capacity, that we must not waste our energy, and that the only way we can avoid wasting it, is to organize it. We must allow it to have air and light and we must build our will-power into a structure of method, order and harmony. All elements of that structure must be clear, intelligible, and in harmony with our permanent inclinations. Intelligence is penetrative only through the force of sympathy and the stimulus of a real liking for the work in which we are engaged. Just as a woman sounds to the depths the soul of the man she loves, and follows his slightest emotions of joy or disquiet, so a historian like Michelet finds in the dull texts of chronicles all the sufferings and ambitions of our forefathers, whom he brings back to life in his history. This is because history is an intensified projection of our soul. It is only by going back to our feelings of childhood that we can understand ancient civilization.

As Paul Desjardins has written: "The embarkation of Columbus at Palos for a shore that perhaps did not exist, his anguish during the voyage, and the existence or the non-

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existence of a whole world dependent on his determination—such is the history of our eighteenth year . . . We have the spirit of the Crusades in our heart; enthusiasm, the distaste for all that is demeaning, and disgust for all that is too easy in life. Many, says the chronicler, Raoul Glaber, wished in their hearts to die before returning to the scene of their temporal possessions."

A chemist has presentiments of the reaction of two chemicals upon each other. A physician, through a kind of divination, hears the history of a life in the revelations of the heart-beats of a patient. A lawyer, in a quarter of an hour, has a better understanding than you have of the problem on which you are thinking day and night. This proves how true it is that, liking for what we study gives a competent mind clear vision, so that all becomes plain to it.

Thus we have seen that there are memories and memories. In badly ordered memories recollections crowd and range themselves in any order they can find. In well-ordered memories only such recollections are admitted which are subject to control and they are installed in due formation in an organic

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structure. This creation of a memory in accordance with our own design is the most precious manifestation of human liberty. Only on such a memory can we found an intellectual life which shall bear fruit in high achievement.

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III

INSTRUCTION THROUGH READING

"Happy are they who hearken
to the message of the dead."—
Leonardo da Vinci.

DANGERS OF READING

Disorderly, haphazard, uncertain and inexact reading reduces to the very minimum the power of the will and the freedom of choice in the development of memory. There is an almost morbid effect in the waste of intellectual energy and the exhausting dispersal of mental force in such reading. In the passion for reading, of the so-called "intellectuals" we discover the consequences of an education not based on sound principles of the human constitution.

We shall never cease to repeat that in order to have intelligent use of our mental energy it is necessary that we spend several hours each day in some light and interesting manual effort. For lack of such relaxation

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most people engaged in intellectual labors, altho thoroughly worked out, spend too many hours each day in devouring books.

As their energy is limited they are not able to give more than a superficial and ineffective attention to such reading. Little by little they lose the taste for vigorous effort, then the habit, and finally even the capacity. It is so easy to turn page after page of a book in idle reading. It is as if we were comfortably seated before some moving-picture representation, and it so satisfying to our indolent inclinations to be able to surrender all control and direction of our thoughts.

Reading is the most dangerous form of idleness, because an idle person who does nothing at all, may suffer remorse for his idleness and resolve to rid himself of it. But if he is an idle reader he believes that he is working and then his idleness is beyond cure. The passion for reading may degenerate into a mania comparable to gluttony. Nervous people read as if they were biting their nails. Take note of them in their own homes, of their air of distraction, and at the same time of their suggested irritation now and then at the presence of their family as they look up from

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their book. They shield themselves against all reproaches by declaring that there must be no interruption of their work and they really delude themselves on this point, so ingenious is the mind at self-deception.

Such reading is an absolute waste of time and it would be very easy to prove to oneself, provided one were sincere, that after a few weeks there is absolutely no resultant impression of such reading. Rapid reading causes the mind to scatter and weakens the intelligence. It dulls our personality through the excess of disorder and unassimilable stimulation. It can never in any sense be considered as real work.

When Cervantes wants to drive *Don Quixote* crazy he makes him indulge in excessive reading. Happily everybody does not pass entire nights in reading as did the *Chevalier de la Mancha,* but many young people of bright promise have suffered their minds to become heavy and dull through the abuse of reading.

The waste of mental energy involved in a day's reading is staggering to consider. Many persons read from one hundred and twenty to one hundred and thirty words a

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minute, which is thirty thousand words in four hours and two hundred thousand words in a week. Apart from the excessive strain on the eyes, we must remember that all this fatigue is a total loss.

In the constant succession of impressions encountered in rapid reading our attention is weakened and disorganized. A certain amount of nervous energy is consumed in the simple comprehension of words and of propositions, with the result that in rapid reading fatigue much greater than we imagine piles up in our brain. This fatigue is wholly without compensation because we do not give ourselves time either to realize the ideas suggested by the author or to confront them with our own experience. Rapid reading unfits one for work and gives one a disgust for it. An idea presents itself, an emotion is aroused, but no regular development is possible because each new impression puts to rout the impression that preceded it.

Let us consider our feelings after having read swiftly through a newspaper or through a mediocre novel abounding in stirring action. We feel tired, our eyes are tired, our lungs are clogged for lack of full breathing, and our

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general physical condition is one of weariness. As for our brain it is empty, tired and dissatisfied. In a word our general condition is one of sluggish languor. What is more, it requires effort on our part to recall anything at all of what we have been reading, and on the morrow we shall not be able to remember a single thing. So our time has gone for nothing. Incidentally let us try to summarize what we can remember of the things we have read during the past week, the past month, the past year. We shall be amazed at our slight stock of recollections. What is the use of such reading?

But it is asserted that "memory exacts the superfluous in order to retain the necessary." This is a solemn aphorism which, on reflection, will be found void of sense. In order to retain what is necessary, the memory exacts that this *necessary* be formulated and repeated. Knowledge that is just caught in skimming disappears, leaving no more trace than does the countryside we see through the car window of a fast express. Thus it becomes evident that there is no use in subjecting the eyes and our supply of nervous

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force to wasteful reading. Rather we should economize our energy.

Medical science shows us that fasting from time to time is good for the health; and for the health of the spirit it is indispensable that from time to time we should fast from reading. When one considers the mind of a Bachelor of Arts and discovers how little knowledge there remains after seven years of studies and lectures it is enough to make one weep over the fallacies of our educational methods. The student who wishes to escape from their deadly routine should resolve firmly not to attempt the difficult and absurd aim of the impossible in trying to know everything. Let him keep in mind the law of forgetfulness, which is the foundation of his intellectual liberty; and let him never indulge in the presumptuous belief that the laws of memory may be violated with impunity.

All reading should be done in a spirit of loyal submission to these inescapable laws.

THE FOUR KINDS OF READING

Respect for these laws having been stipulated as a preliminary condition about reading, we may next turn to the divers kinds of

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reading, for reading with different objectives demands different attitudes of the attention.

The first and most important kind of reading is reading for instruction in a profession. Through this reading the student prepares the soil of his mind and enriches it with the seed of knowledge of his profession, whether he is to be a philosopher, a historian, a linguist, or what not.

Secondly, we have complementary reading, which is designed to complete studies in certain special branches, or to compare results attained with the records of those superior minds who have also devoted themselves to the facts we are studying.

Thirdly, there is reading for edification, that is reading designed to strengthen the rather too soft clay of our good intentions and our will-power by the example of the firmness and stability of the minds of the greatest men.

Fourthly and finally, we have reading for mere diversion.

READING FOR A PROFESSION

Our reading for this purpose should be regulated by one general rule. We should remain masters of our nervous vigor and of

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the limited power of our attention, in order that our mental forces are always fresh in attacking any position to be gained. Any reading of which we can not show evident profit is hurtful, because it wastes our strength, increases the number of hours we spend in sedentary occupation with faulty attitudes for breathing, and adds to the fatigue of the eyes.

Just as in war the concentration of forces is of supreme importance, so in that intellectual war of conquest, which is reading, we must have our forces concentrated. In every province of knowledge there are some books of supreme value. These books constitute strategic positions which we must invest with courage and with patient tenacity. Thus for instance, a student in philosophy will find excellent philosophic training in some of the more important dialogs of Plato and in the ethics of Nicomachus, the essential sections of the "Metaphysics of Aristotle," by Ravaison, the "Meditations" of Descartes, the last two books of Spinoza's "Ethics," the "Quest of Truth," by Malebranche, the "New Essays" of Leibnitz; and among the moderns the "Philosophy of Hamilton, the

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"Logic" of John Stuart Mill, and the "Special Analysis of Psychology," of Herbert Spencer.

Now, as it is of great importance not to scatter our energy, it will be found prudent at first to attach oneself to one author and follow him obediently in order to have a line of solidified ideas. Thus when I began to study philosophy I took up first the "Philosophy of Hamilton," by John Stuart Mill, and then Mill's "Logic." Little by little I gained a thorough understanding of these two works with the result that, tho at first I followed the footsteps of my master, Mill, and was nourished solely by his doctrine, gradually I came to see the limits of his thought and the weakness of his metaphysics. But it is only because Mill enriched my mind and served so long as its guide that I was able to travel beyond his point of view. The "Meditations" of Descartes and the works of Malebranche and Leibnitz were later abounding sources of intellectual wealth for me, but this happened simply because I had obtained so thorough a groundwork in the philosophy of John Stuart Mill.

One can become a teacher only after one has toiled as a docile pupil, and such is the

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weakness of human thought that nothing should hurry us to abandon the tutelage of a great mind. If you read as you should read a great work, that is in understanding it, and to understand it means to compare the ideas of this work with your own experience, you will gradually come into possession of your own mind and think your own thoughts. We are all like the child that clings to its mother during the months when it is making its first steps. As the child grows steadier on its feet the mother withdraws a little from it and lets it walk alone, but is always ready to catch the child lest it fall. Our pride rather resents the idea that the mind should need maternal tutelage. Yet it is always found that persons of vain pretension, who wish to travel alone too soon, suffer from a twisted kind of mind, just as children who attempt to walk before their legs are strong enough show the consequence in crooked legs.

But we must not deceive ourselves about the services to be rendered us through reading. A book creates nothing in us. If I do not know what a glacier is, or what the sea is, no description of either one or the other can supply the lack of direct experience of such

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objects. Similarly a lazy person can not understand the profound happiness involved in creative effort. He simply does not believe in it. A selfish person does not believe that there is any compensation in giving up certain pleasures and inclinations for the sake of those who are dear to us. Moreover—and this is a severe condemnation of our encyclopedic method of education—every book and every educational course which aims to instruct one without direct experience of that of which it treats, merely instructs in parrot fashion.

BOOKS MERELY INSTRUMENTS

Books are comparable to the microscope or the telescope. Thus an author is able to show us the relations, consequences, and antecedents of facts which might escape minds that are less rather than more vigorous, penetrating, logical, or prepared. But the source of knowledge lies in external and internal realties—that is to say, in life, in experience, in thought. It is necessary to understand this point well. In the "Song of King Dagobert," Péguy says: "Scholars, that which annoys you is the fact that there can be reali-

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ties." Let us not be such scholars, and let us be convinced that realities exist.

This fundamental statement enables us to conceive what reading should be and what it should not be. To read passively is to waste one's time. To read is to understand, is to grasp with energy the author's thought, in a word it is to think.

Now every act of thought consists of an affirmation or a denial that a certain thing exists, or that it resembles another thing, or that it has certain relations in space and in time with some other thing, which relations are necessary, or fortuitous. So reading is always affirming or denying an existence, a resemblance, a relationship in time and in space. The words and propositions of a book should never halt the thought of the reader. We must break the bone in order to reach the marrow, or in other words, we must get to the root of things. Reading should not be a servile acceptance of affirmations or denials by the author, but should be a comparison of them with reality, with experience, and with reason, which is the condensation of the experiences of the human race. We should not endeavor to learn so much what the author

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has thought, but whether what he has thought is true. Again we must scrutinize, even more carefully than his affirmations or denials, the motives which impel him to make them.

By way of example: if an author affirms out of sheer paradox that Homer or Shakespeare has never existed, we must examine into his reasons for making such a statement and not into the statement itself. If it is asserted that a whale has more points of resemblance to a man than a shark has, a profound examination of these comparisons will settle the question.

When the invasions of the Asian barbarians are explained to me as the result of the gradual drying up of the soil of Central Asia, and when an engineer who has worked in Mesopotamia informs me that the irrigation canals of ancient Babylon are five yards higher than the highest water of the River Euphrates, the bond of causality between the two facts seems credible to me. . . .

All knowledge that has not passed the true test and which we take on credit is pseudo-knowledge. It is a game with memory, but only a game and it does not become part of the knowledge of the soul. Through such

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knowledge one becomes merely a bookish person; and not only because one does not compare the printed fact with the actual fact, but because in the end one is unable to see realities except through the deformation and blur of print. Thus our mind soon becomes overladen and paralyzed with the accumulation of opinions and facts in which we can not distinguish the true from the false.

In many of our text-books the teaching of Moral Philosophy is based on the Categorical Imperative. According to Kant the moral law does not proceed either from experience or from the Divine Will. It is suspended between Heaven and Earth. In geology we know that certain phenomena of movement are of common occurrence. For instance, a stratum of very ancient period becomes covered with a stratum of much more recent date. A somewhat similar phenomenon took place in the brain of Kant, where the critical spirit he had borrowed from Descartes and Hume came under the influence of old religious sentimentality, and thus these old religious sentiments envelop the "Critique of Pure Reason."

His doctrine arbitrarily considers the or-

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dered universe of Descartes and the Latins an incoherence because we introduce reason and morality into it without any justification and as it were by a *coup d'etat*. His doctrine cuts the universe in half. How much finer is the doctrine of the great Greek and French thinkers who consider the universe as tending wholly toward a reason clear and still more clear and which finds solid foundation in reason and in the essential order of the realities. The Categorical Imperative is a pretentious phrase void of truth, an opaque screen between the spirit of analysis and the reality.

In war a commander must know what forces are hidden behind the first line of sharpshooters, and, in case of necessity, he must by a vigorous offensive force the enemy to reveal his full strength. In philosophy also the mind must pierce the curtain of words and penetrate to the realities by vigorous effort. We must never pass over a word, a proposition or a page, the meaning of which we grasp only vaguely. We must stedfastly weigh the exact meaning of words, especially when they are of prime importance, such as the word "act" and "power" in Aristotle and the

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words "intuition" and "simple natures" in Descartes.

USELESS LEARNING

In general, so-called erudition is merely a substitute that we make use of to escape the trouble of digging to the root of things. A quotation is so handy when we wish to avoid laborious effort. If it appears before the author has elucidated his own thought it should be held suspect. Buffon observed that the Germans, whose method of thought rarely attains to clear and distinct thought substituted erudition for the energy of intuition. He wrote: "I was struck by a defect, or rather an excess, to be noted among the savants of Germany even to-day, and that is that they overload their works with a quantity of useless learning. The result is that the subject they are treating is swamped in a mass of strange matters on which they reason with great complaisance and which they stretch out with slight consideration for their readers. Thus they seem to forget what they themselves have to tell you in their concern to tell you what others have said." This statement appears in Buffon's "Natural History" from

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which I quote again as follows: "I notice also that in his library the German savant reads one after the other the ancients, moderns, philosophers, theologians, jurisconsults, historians, travelers, and poets, and reads them with no other aim but to seize upon all the words and phrases that have a near or remote bearing on his subject. I see him copy and have copied all their observations, which are filed alphabetically, and when he has filled several portfolios with notes of all kinds, taken without examination and without selection, he commences to work on a particular subject and does not wish to lose a single item of all the material he has collected."

Thus it happens that most readers are constantly distracted from the thought of the author by notes and remarks either biographical, historical, grammatical, or what not.

Let us beware of imitating this erroneous method. Let us labor to follow the sequence of ideas according to their relative importance, their bearing one on another, and the value of the proofs that proceed from affirmations or denials. Also let us note how a great writer presents with limpid clarity the organic thoughts that give life to his work.

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SELF-KNOWLEDGE THROUGH READING

But merely this is not enough. In order to commune intimately with a thinker I must always keep my own experience face to face with his. This practise is the only means through which I can right myself at the beginning of my intellectual life and through which I can become aware of the profound tendencies that animate my personality. In the calm of my study certain thoughts of the author produce deep reverberations in my soul. My sensibility yearns toward them enthusiastically and receives them as long-lost friends. But other thoughts, on the contrary, provoke a sullen hostility within me which may disappear through meeting them oftener. But my feeling of hostility against others still, is unchangeable. Thus, for instance, the postulates of the "Critique of Pure Reason" of Kant seem to me so illogical and so hypocritical that they have always awakened in me the deepest repugnance. It is by listening to the harmonies stirred in my mind that among the medley of confused thoughts and ideas I am enabled gradually to select the idea that is fundamental. Thus

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I can choose my intellectual companions and the way I may travel with good hope of success, because this fundamental thought will develop in me all that has force and endurance. How often have I not seen young talents go to waste because their possessors were badly informed about themselves and consequently yielded to suggestions that only led them away from the direction of the permanent currents of their soul. The result was that whatever they undertook, they undertook with a feeling of distaste, with an inward suffering, and so the enthusiasm of creative work was impossible and their discouragement inevitable.

Disraeli says in "Endymion" that "every man in the world succeeds in doing what he likes to do, provided he really likes to do it." This is tantamount to saying that a young man is sure of achieving a successful career if he proceeds toward his future with united energies instead of with energies that are divided among themselves. But as I have written in my "Apprenticeship to the Art of Writing" the name of those is legion who, because they have not learned to distinguish in their own minds the difference between that

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which is stable and fundamental as opposed to that which is casual and accidental, are consequently unable to thrust the roots of their moral and intellectual fiber down to those sources that are inexhaustible.

It is necessary, moreover, that we read only masterpieces, and that we live "in the shadow of the great masters." Once such a choice of reading is made, we must adhere to it with entire loyalty and with all our forces, and we must acquire the habit of sounding the meaning of words to the depths, and never pass over a word that we are in doubt about, or ignorant of. The study of the continuity of ideas, of the logical progression of reasoning, and of the value of evidence fortifies our mental energy, sharpens our judgment, and creates within us the need of confronting ideas with experiences, with reality. In this manner we acquire a lively sense of evidence.

Reading that is done with vigor is heavy work, and we must not indulge in it except in our moments of fullest energy. A few hours given each week to such reading are sufficient. We must be fixt in our determination to read only works of the first class. We must confine ourselves to those beautiful,

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powerful and opulent productions over which generations of learned men have labored to secure the text in its pristine purity. Among these are the works of Plato, Aristotle, Montaigne, Pascal, and others. Such works alone deserve the devotion of all our feeling and our intelligence. They alone deserve the complete effort of a personality which is resolved to find itself in the struggle for truth.

COMPLEMENTARY READING

But there is reading of another kind, which does not by any means make so great demands on our energy, and this is what is termed complementary reading. Now we must never begin with complementary reading. Thus, for example, if I am resolved to study the question of character I will begin by a thorough examination of the classification of Ribot, the most eminent of modern psychologists. With each one of his remarks I shall compare myself and the character of people whom I know well. Such verification will require a great deal of time, but it is only when my conception of various characters has become definite, concrete, and vivid, that I will take up as complementary reading the studies of Ribéra,

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Perez, Paulhan, Malapert, and others. To follow any other method of procedure would result in disorder, incoherence, and entanglement of the memory.

Similarly, suppose I have to study "Rodogune," a play by Corneille, for which he always had a warm regard. At first I shall read the tragedy slowly in order to acquaint myself with what goes to make up the drama and the plot. Then I shall slowly read the more notable scenes because of their "solidity of logic, warmth of passion, tendernesses of love and friendship."

As I know that I can not remember everything, and I ought not to try to remember everything, I shall concentrate my mind on three passages: 1. On the expression of the exquisite friendship between the two brothers; 2. On the expression of the love of *Antiochus* for *Rodogune,* and of *Rodogune* for *Antiochus,* a love that is discreet and delicate; 3. On a scene that is admirable because of the vigor of its thought, for instance, that of the confession of *Cleopatra* in the second act, the third scene. I shall write down in my notebook, in order that I may be able to refer to it frequently. "the force of the verse, the fa-

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cility of expression, and the solidity of the logic'' of these sixty imperishable lines, which I shall study over and over again.

In this manner I shall come to know these three characteristic scenes of the genius of Corneille, so that I can never forget them, for that which should most interest a student of literature is the expression of the feelings of the human soul by a great writer and his wonderful flights of thought.

As often as a young student acquires complete knowledge of a text, he will be surprized to discover of how little service to him are even the most famous of critics. They pursue the secondary career of criticism because they feel that they are incapable of creative work. In the manner of parasitical plants they live on the strength of others, that is to say, on the work of those who think for themselves. Some critics vaunt themselves above the author and strive to dazzle the audience on the occasion of his appearance and shine at his expense. Other critics again find in authors merely a pretext for polemical discourse.

For that matter, how many of them have the time humbly and perseveringly to penetrate the thought of the master? How can we

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be just toward a writer unless we have made a profound study of his work? The only criticism that can have influence is that which places itself in the position of the person who has produced a creative work, and shows from his point of view the imperfections of his effort, and above all, suggests what he ought to have done. Any critic who is subject in his criticism to dull antipathy, or as so often happened to Sainte-Beuve, to a jealousy that he can not repress, is bound to be led into grave errors.

The best of them are whirled about in the maelstrom of life in Paris. There comes to mind an avowal of Brunetière: "I read a great deal, I read rapidly, and I have a good memory. For instance, this morning I read in two hours the new book of Anatole France 'Sur la Pierre Blanche' which was published last evening, and I read it in such fashion that I am capable of giving a full account of it, that is, of analyzing it, commenting on it, in a word, of writing a criticism of it."

Does not this seem either a very cynical confession, or perhaps the evidence of a startling lack of knowledge? Bearing it in mind, one is not surprized to hear this critic indulge in

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incoherent and ridiculous judgments on Corneille. He says: "Corneille's tragedies are beautiful, admirable, sublime, but they are neither alive, human, nor real." A tragedy which is neither human nor real can not be admirable. It is the work of a madman, and to speak thus of Corneille is to pronounce judgment on oneself. Bainville says: "The truth is that Brunetière gave utterance to categorical statements, in a manner that admitted of no reply, about subjects that he understood neither through thought nor feeling." Let us be prudent, therefore, in our selection of books for complementary reading. Let us guard against wasting our energy, and disdain to read authors who write too much and too fast, and who flood the reviews and the daily newspapers with their inexhaustible chatter.

We are very simple-minded when we are young, and we are beguiled by famous names. We do not realize that when well-known authors let themselves be lured into the maelstrom of Parisian life their energy very soon becomes dissipated. It is beyond them to spend long weeks in tranquil meditation. They are on parade, called upon to express

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themselves in the newspapers, and nearly all of them live thenceforward on the capital of conscientious effort accumulated during their years of obscurity. To this capital they never add anything. How many members of the French Academy have written or are now writing without ceasing? In years to come, when literary prospectors seek for gold in the immense tract of sand they have left behind, how laborious and discouraging their search will be.

Nor should we read the works of authors without personality, even if they are members of the Institute, for they lower history to the level of back-stairs gossip and show an unhealthy and spying curiosity in biography. This taste for that which is contemptible is the sign of a small mind. Of what importance is it to know whether Faustine was faithful to Marcus Aurelius? The question of the social weaknesses of Louis XIV or Napoleon is a subject only of interest to those who revel in idle and unprofitable gossip, to which we should never allow our minds to descend.

A familiar form of complementary reading might be compared in some wise to hunting. Just as the hunter goes across fields and

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through the woods, his finger on the trigger of his gun, his eyes and ears alert, so we go through books in which we hope to find some information, some suggestion, some aid. As we read thus currently, all the comprehensive quality of our mind is active, and very often secures for us some returns. But what a loss of time and freshness of mind is involved in such reading. Beyle called it "reading with one's fingers." This is the kind of reading done by the erudite, which is very dangerous because it gets us out of the habit of thinking for ourselves. On the contrary, it becomes our practise to avoid testing what we read with reality, or with what we know within ourselves.

MORAL READING

Ranking above complementary reading and on the same level with reading for intellectual information we find reading for moral instruction or mental edification. There are certain books vibrant with good so that they enfranchise and fortify the spirit mightily. In the midst of the turmoil and sway of the passions they enable us to set the foundations of a stable will. This is possible only if we

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patiently organize superior thoughts and reasonable feeling in blocks of resistance. In my "Education of the Will" I make clear the strategy and tactics through which we may succeed in this building up of our personality and character, and many readers unknown to me have written by way of appreciation that this book has been their salvation. Such books can be compared to tonics, for they are designed to strengthen our good resolutions and our higher thoughts, and they should not be read rapidly. They should be read in meditative fashion so that their essence is distilled into the soul drop by drop, as we take away the memory of them in our walk of life. St. Francis de Sales spent his whole life in pondering on the "Spiritual Combat." We must take the thoughts of higher men and shape them into a "spiritual bouquet" from which we shall inspire the perfume of strength in moments when our heart seems to fail. It is a good practise to learn by heart the axioms of the noblest of the great moralists.

Also it is the duty of each one of us to seek, amid the souls of those who were most richly and most nobly endowed with the wealth of

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the intellect, the particular ones who are nearest to our heart, and to form of them a family whose wisdom and affection serve as help and support as well as stimulus in our intervals of discouragement.

Above all, they who are young must not forget that they are weaving the warp and woof of their future. Apart from the tragedy of premature demise the only cruel fatality is the slow imprisonment of the soul in idle or evil habits that finally become too strong for the will to break. Once will-power becomes weakened the slow building up of the prison that closes in the soul is a dire tragedy. Moreover we must have heed in our selection of reading, for in what we read there is to be considered the dignity and the liberty of our riper years. Some books there are which we should absolutely forbid ourselves to read.

Frequent association with embittered and discouraged invalids is depressing. Now there are many writers who lead a kind of abnormal life which makes them invalids mentally, so that their works are heavy with a something unhealthy and morbid and their effect is to diminish energy and happiness. If we decide to give our attention only to the

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inevitable contrarieties of life we may without much effort become disgusted with both our line of occupation and life itself. Let us therefore have care to keep the will to live intact within us, and let us dismiss without the slightest hesitation those books that oppress and discourage us, or incline us to believe that at another period, in another country, under other conditions, we should have been happy mortals. It is our business courageously to do our duty in the period and place in which we actually live.

READING FOR DIVERSION

There remains to be considered reading that is done for diversion. The number of novels published each year is almost beyond computation. Criticism is no longer independent; and it will be remembered that there are other faults with which we have charged it.

It is impossible to judge whether a book is possest of any value until we have read it. But we can confine our reading to such novels as have an established reputation. The great majority of novelists are first of all money makers, and they are in a great hurry to make

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their money. They have neither the time nor the taste to practise scrupulous regard for truth and for verisimilitude. Their highest aim is to arouse the elementary emotions by placing their heroes and their heroines in dangerous situations. From these dangerous situations other heroes, who are invulnerable to bullets, able to walk through stone walls and to disregard utterly the laws of gravity, come to the rescue of the heroes and heroines in desperate plight. One rises from reading such books with a false notion of the design and color of life and with a mind dulled by the infection of the absurd. Literature of this unhealthy kind flourishes because the great mass of readers demand from a book only such mental excitement as they find provided in the reports of an actual crime or a daring burglary. The mind has such a tenuous control over the scientific spirit that intercourse with silliness and stupidity may produce impairment of a sound intelligence. For this reason it is wise to avoid any such risk in frivolous reading. It is to be noted, furthermore, that reading which interests us solely through the appeal to our curiosity involves us in another imprudence, namely that we

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spend long hours sitting perfectly still at the same time as we make an exhaustive demand on our eyes. Such reading is nearly always done at a kind of grand gallop, and leaves the reader thoroughly tired, because he is continually hurrying and devouring page after page in order to reach the end and find out how the heroine is disentangled from the various complications in which she is placed with a staggering swiftness of succession.

This kind of reading is to the mind of an intellectual person what alcohol is to the mind of the workman. It is a pleasure comparable to the pleasure of drinking or smoking. The great danger is, as in the case of all stimulants, that the need for such reading becomes a tyrannical habit. We give hours to idle books which we should be spending in some recreative manual occupation, for which alas our unscientific educational methods do not prepare us.

We shall never feel the need of frivolous reading if we like our work so well that it becomes the center of our intellectual life, and if we find in it the joy of constant new adventure which lies in the pursuit of truth. The only unhappy people are those to whom

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work is a kind of punishment and they seek refuge from themselves in tobacco, alcohol, gadding about, the theatre, detective stories and love stories. It is for such as these that our fast printing presses turn out the flood of cheap novels, and that cheaper writers toil incessantly.

To sum up, we must remember that, in order to have a cultivated mind and to be a person worthy to be called learned, we must be careful not to let ourselves be overburdened with too much knowledge. Men who have constructed great works know how to manage the conquering energy of their intellect. Generally they will be found to have read little, but to have reflected much. They have had the courage to advance and look the problems of life in the face as did Descartes and Pascal. They knew that they could understand truly only that which they themselves discovered or rediscovered through the employment of their own brain. They knew that learning can become positively deleterious if we read habitually without personal exercise of the mind. We must earn the bread of the soul in the sweat of our brow, as Malebranche has said; and when a man has too much know-

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ledge, he underrates the labor of attention, for as Montaigne tells us, too many recollections render judgment unsound. Pascal says that too much or too little learning makes one dull and Hobbes remarks that one is not enlightened in proportion to the amount of reading one has done.

THE ART OF TAKING NOTES

But in any case, however thrifty we may be in the management of our energy, the great mass of indispensable reading we must do would overburden the mind if we tried to remember everything. Fortunately we have the memory of paper, or in other words, the supplementary memory of notes which are of great aid to any intellectual worker. If we do not take notes, many of our recollections become vague and scattered.

But notes may become a menace in themselves and in the quantities in which they are gathered. First, notes are dangerous in themselves if we take them in moments of indolence or drowsiness of our critical mind, so that they constitute a troop without cohesion and without the power of resistance. Secondly, notes are dangerous in the quan-

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tities in which they are gathered, because if they are not properly organized they are like a routed army, which in the hands of its leader is only a terrified mob.

It is evident, therefore, that there is an art in taking notes and each one of us will possess notes that are valuable in proportion to our command of this art. Good notes are the reward of will-power that knows when to suspend judgment and to deny admission to any fact that has not stood a thorough test. But rigorous choice in the acceptance of that which is to be noted down is not alone sufficient. It is necessary also that each note we take be classified so that when it is needed we can instantly lay hands upon it among a thousand others.

When we are reading for intellectual instruction we must take notes because of the weakness of the attention and of the memory. We have seen in the foregoing pages that our minds need the suggestion of writing in order to sustain the attention. The purpose in taking notes is that we may have at convenient disposal the thought of a master which we can summon frequently in all its clarity and precision. Eventually it becomes

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imbedded in our memory so deeply that we can never forget it.

We must beware of imitating those shiftless persons who think that to summarize a subject is to pick up here and there a phrase or part of a phrase. If our notes are not made with vigor of mind they will be ill digested and of no help to us. We must delve into the thought of an author so that, first we understand it and then, we are able to *express* it, in the strictly literal sense, which means to force out of a fruit any liquid it may contain by strong pressure exerted on the fruit. The juice of a grape is forced out by pressure, and so, also, the essential matter of an author is forced out by a kind of condensation of his thought, and this requires energetic effort. When we have made our notes and classified them, we must read them and re-read them until we have learned them by heart, if need be. This is a practical kind of effort, for thus we advance in knowledge and leave behind us in our path a succession of recollections organized in indestructible form.

Altho my memory is so poor that I am scarcely able to remember twenty lines of

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verse, nevertheless there still remain fresh in my mind certain books I read thirty years ago. These are "The Meditations of Descartes" the "Special Analysis of Herbert Spencer" and the "Psychologic Theory of Matter" of John Stuart Mill, not to mention others. I remember these books because over and over again during my walks and in moments of leisure I have re-read the notes I made in the full flush of energetic attention.

With reference to notes taken of our reading for moral edification it is to be remembered that they must be kept in a place of their own. When we glance again at them we shall hear the friendly voice and the encouraging words of the greatest of our ancestors. We should not hesitate to copy passages that help us in moments of discouragement or of grief, or that have reinforced our ardor in our moments of strength.

Thus far the taking of notes is obviously a simple matter. Difficulty confronts us when we come to take notes of our complementary reading, which leads us through books and reviews and extracts we have saved in order to aid our memory. The saying is that, what helps does not hinder. We should

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guard against taking notes in absent-minded fashion because that is pseudo-effort, and also we should guard against taking notes when our critical faculty is only half awakened. A certain author has said that when he was tired he set himself to work at taking notes. Now, notes taken in moments of sluggishness are dangerous, because when the time comes for us to use them we shall have forgotten the conditions under which they were taken. We should keep a strict censorship over our notes and ask ourselves whether this or that citation is authentic. If we clip a section from an article in a review or in a book, and it is signed, we should ask ourselves about the competence of the author. Is he really an intelligent witness of the fact in which we are interested or merely a pseudo-intelligent? Does he think merely with words, or does he keep in touch with the reality of things? Is his testimony valuable in the present instance? What is his character and habitual rank as an authority? Is he of too emotional or impulsive mind, or does he maintain a mind that is free and open?

By way of example as to my own preferences, I may say that I should hesitate at

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making notes of any judgments pronounced by Brunetière on Corneille, whom Brunetière did not like and did not understand. Nor should I care for his opinion on a novel which he read within two hours. No matter how high an authority a writer may be considered, I am influenced only by such affirmations or denials of his that he can prove or that I can prove. When Hello declares that La Fontaine is not a poet I laugh, and turn to re-read some of the most beautiful poetry in our language. Thus I reprove and discard a critic who is biassed and unsound. Often we are carried along by a writer who has spirit, humor and audacity, and from him we may take a passage for remembrance or merely make note of it.

SIFTING ONE'S NOTES

In order to save myself from being glutted with notes I have a drawer which I call my sieve. Into this drawer I throw what notes I make just as they come. It may be a passage copied, some thought summed up in a few words, a clipping from a newspaper, a page from a review, or from a book that in its entirety is mediocre, yet possesses some essen-

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tial truth. I have no respect for books that I purchase on the strength of the title or the name of the author and with which formerly I was wont to burden the shelves of my library. Nowadays I cut out the passages that interest me. At the end of every three months I make an examination of the notes gathered in the drawer which I call my sieve, and I submit them to the test of value. Thus I ask myself: Did I cut this clipping or make this note because it flattered my own preferences, or because it is true? Is it true and does it prove what it affirms? I eliminate mercilessly from these notes all that were gathered because of their association of ideas, which now have passed and were therefore of no stability. I eliminate also all notes that seem feeble or vague. Often enough nearly the entire lot of notes I have held in my sieve is consigned to the waste basket as the result of this rigid examination. The notes I do not throw away, I classify. Consider now that when I take pen in hand to write something based on the notes I have collected, how great is my feeling of security because all these documents, which are the foundations of my article, have been verified and subjected to strict criticism.

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If we do not exercise this severe censorship on notes in the beginning, we are sure of nothing and also we lose the delicate feeling for what is just and correct.

In writing his books on sociology, Herbert Spencer had to classify an enormous quantity of facts, and in order that he might more easily clip from the books of reference on which he worked, he always bought two copies of important works. His secretary made note of the references on each clipping and classified them in the semi-circle of envelopes which Spencer laid out on the floor. He tells us in his Autobiography that "some times a single fact showed me the necessity for writing a chapter that I had not hitherto thought of. Then I would take another envelope in order to place in it this fact and similar ones."

Darwin, we learn from his "Life and Letters" took careful note of facts and the hypotheses opposed to his point of view, because he had come to realize that he forgot these more easily than such as were favorable to his conception. He always worked on several books at a time. He had constructed a cabinet with about thirty or forty drawers

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in it and in these drawers he deposited all his references and his notes. In the fly-leaves of books that he bought he added a table of facts concerning the works on which he was engaged, but if a book did not belong to him he wrote a résumé of it on separate sheets of paper. Before undertaking any work he made a thorough examination of all his tables of facts and of all his files so that he was able to profit by all the information he had gathered during the course of his life.

HOW TO CLASSIFY NOTES

After many experiments the following method of classification seems to me the best. If our classification is too complicated, instead of diminishing, it rather increases the possibility of confusion. Forty drawers are as many as any one should have, I believe, because with a greater number we run the risk of confusion. I have had made for me two cabinets containing forty boxes of heavy cardboard, the front of each opening out like a trap-door. These boxes are numbered and every number corresponds to a general title-head. For example, all that relates to intellectual work is stored in one case, all that

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concerns will-power and will in another, and so on for memory, reading, etc. Naturally, each one of us should formulate his methods of classification in accordance with his taste and the nature of his work.

When I make note of anything or cut a passage from a newspaper, a review or a book, I have in mind the list of my boxes of notes and I write on the present note the number of the box in which it is to be filed. If it is a note of sufficient importance it immediately finds its place, but if for any reason there is some doubt about its place, I hold it in my sieve drawer for further consideration. If I am reading a book or review which does not belong to me I make a note and a résumé in two lines, in which I indicate the nature of the reference with a cross reference to the book and the page.

Work done in this fashion is not founded in sand and no effort is lost. My observation, my reading, my thoughts come to me when I am walking, or when I am lying in bed, and I make note on leaves of a small pad of such images as are suggested to me by natural scenery, etc. From time to time I examine my files of notes and make radical selections

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and re-arrangements. Thus it happens that when I have to write a book or a chapter on any certain subject, I have at hand, and sifted through constant control and criticism, my entire experience of thirty years.

When I have really serious work in mind my first effort is to make provisional plans with the idea that they shall later be revised. The essential necessity in making such plans is that they be clearly defined, because the sensibility of our mind when it is working on some subject and the richness of its intellectual acquisitions must be governed by the definiteness of our directing ideas. The association of ideas, when we are engaged on any work, is so prolific that when I have had a book on the ways for twenty years it seems almost to be self-constructed and as if without my intervention. This is a slow organic growth without spasmodic intervals, but calm regular and effortless, because once the brain is thoroughly trained, it is no more difficult, and it is much more agreeable, to think of one's work than to ruminate on the inevitable irritations of daily life. Thus I have passed a happy life and one of deep satisfaction. Habit makes everything easy, and it

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creates the need of work in us to such a degree that, if any day passes in which I have not spent two or three hours of vigorous effort, my unemployed brain energy will awaken all the preoccupations and all the little worries with which every one of us is more than amply provided. While we are working, such troubles of the soul pass unnoticed, as is the case with our physical being, for we do not notice various minor physical discomforts unless we are doing nothing.

Vauvenargues remarks that a man "who is a heavy eater and has a bad digestion is perhaps the best illustration of the character of mind of the majority of savants." We all have weakened our mind and disorganized it by our voracity for books. We are all the victims of an unreasonable credulity, by which we believe in a kind of super-nourishment of the mind through reading many books, which in reality causes only chronic indigestion.

READING NOT MUCH BUT WISELY

To those who can see the matter clearly, it is evident that the abuse of reading is only a morbid form of the fear of effort. Read-

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ing, we do not hesitate to repeat, is the most dangerous form of indolence because it forestalls remorse by giving the illusion of work. To my mind many budding talents have been destroyed by the constant cry of teachers to their pupils: "You must read! You must read a great deal! You must keep posted on everything that happens." Such counsels dissemble the essential truth that in order to find ourselves we must strive and toil, and that the dissipation of too much reading can not serve us to this end. We must insist on this point because this erroneous method is the cause of a great deal of harm. During the war a young man of worth and courage wrote from behind the lines to his father: "As soon as I got here I gave myself up entirely to reading. I spent all my time from half-past seven in the morning till half-past eleven at night, or later, in reading, excepting only the time I gave to meals and in exercise." The letters of this soldier which appeared in *Revue de Paris* (May 1, 1918) show that he hoped from such reading to gain several results of which the most important, as he saw it, was "the development, or to put it more accurately, the precision of my personality."

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Alas, he found in it only disgust, scattering of energy and a general miscarriage of ideas.

As so many others, I myself would have suffered a complete dissipation of mental energy through the abuse of reading if I had not been lucky enough to leave Paris for a college in the south of France, in which locality I could find no books on the subject of my courses. In consequence I was obliged to depend on my own equipment for the examination of the questions that I was to expound to my students, and then came the great discovery of my life. I found that a few hours of personal effort spent in the actual study of a question led me much farther along the way of truth than did whole days of reading. What is more, I found that my reading was of greater illumination to my mind when it followed rather than preceded a personal analysis of any problem.

Then it became known to me that reading among the masters gave me efficacious aid only when I myself had done the very best I could to elucidate a question. Then it was I understood that a master is comparable to a guide in a difficult climbing feat, in the fact that he can make no efforts for you. You

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must make them for yourself. His duty is to help you, and above all to give you confidence in proving to you by his example that such a climbing feat is possible. But you yourself must climb with the persistent and sturdy efforts of your own hands and feet on the rocky side of the mountain.

The secret of a perfect development of the mind, which we iterate and reiterate, consists in setting aside everything for the sacred hours of pure intellectual energy requisite to the business of composition of the mind. Reading is valuable only in the measure that it serves to complete our knowledge. It is dangerous if it habituates the mind to a state of flabby passivity, and if it tends to scatter our mental forces.

THE RÔLE OF THE CRITIC

Our young people are constantly exposed to the danger of being drowned in the rising flood of books. They are rarely helped by criticism because the newspapers are too much inclined to publish favorable criticism. The unusual critics, who are independent, such as Brunetière or Faguet, suffer a certain loss of penetration as the result of the demands of

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journalism and of a career that too many varied occupations split up into fragments. Because the labor of justly appreciating a profound work is long and toilsome they necessarily come to abide by the doctrine of Sarcey who vaunted the claim that as far as criticism was concerned he was above all a critic "of good sense."

"What does it mean to have good sense?" he asked. "It is to weigh the current of opinion on every event and to formulate it. It is this, nothing else, and nothing more. But it follows, therefore that good sense is variable and uncertain, for what seems good sense to-day, very often does not seem good sense to-morrow. To have good sense means, therefore, to think as everybody thinks, or at least as the great majority of decent people think, just at a given moment. Moreover, the necessity still remains that this opinion be rendered in a clear and concise fashion to everybody who previously has had only a dim consciousness of it. There are those who have the gift of thinking as everybody thinks. I believe I am one of them."

This is the understanding of the task of a critic as intellectual guide which is bequeathed

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to us by one of the most famous critics of the Nineteenth Century. It sounds rather like the declarations of a candidate for political office. I do not know whether Sarcey ever "discovered" and encouraged a young author of merit, but I should be surprized to learn that he had.

As far as I myself am concerned, I can state that, of hundreds of criticisms of my own books which I have read, with three exceptions they all showed that the critic had not read the book he ventured to criticize. In Herbert Spencer's "Autobiography" we read that he finally forbade his publisher to send copies of his books to the newspapers. The truth of the matter is that any work of value to which an author has given the full sum of his energy over a period of years may very easily displease critics like Sarcey, like Faguet, like Brunetière. Under the pressure and distractions of their lives critics are obliged to live on the ideas they have acquired thirty years back, which have become hard as cement, and so they are no longer open to the reception of new ideas. What is more, they reach a state of imperviousness in their attitude, which is disarming.

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"I hardly ever re-write," Faguet confessed, "because I would rather write much than write well; because I imagine I have many things to say, and also because I love to stir up ideas, and when one article is finished, another idea immediately suggests itself so that I am unable either to delay or to consider the previous article." It is evident that this is a confession of a complete scattering of the mind, and as it were, a very definition of verbomania. "As the result of writing every day on all subjects," says Flaubert of his hero in the *Sentimental Education*, "and on all manner of subjects, of reading many newspapers, and of hearing many discussions, his mind gradually reached that condition in which it could form no exact notion of facts."

The proof of the lack of fundamental judicial quality in these critics is that in the end they become controversialists. Now controversy is contrary to the scientific spirit and to the critical spirit, the purpose of which is to educate the reasoning powers of the reader. Few freethinkers can put themselves in the attitude of Pascal or of Bossuet, few Catholics can admit the point of view of a sincere unbeliever, few Protestants can speak with-

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out certain limitations, even when they speak of St. Francis de Sales. All this is the result of our wretched imprisonment in the personal viewpoint.

The very fact that, instead of producing a work, he criticizes the work of others inspires in the critic a secret jealousy of creative minds however much he strive against it. This feeling of jealousy, we have said, even tarnishes the judgment of Sainte-Beuve, who likes only writers of the second class, and who is very acidulous in his tone toward men of genius.

The fundamental qualities requisite in one who desires to guide the judgment of the crowd are perspicacity, impartiality and impersonality of view. To these must be added sympathy and kindness for productions that are the offspring of sincere writers. The critic should also be conscious of the difficulties experienced by the finest minds in their attempts to express their thoughts and feelings, and he should show charity even toward the unsuccessful efforts of noble minds. It is apparent that the element of controversy must be excluded. The critic must be given to long meditations and to a profound sense of the mission of a writer, which is nothing

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if it is not that of an educator in the full meaning of the word.

I sometimes think that a person entering a library deserves our pity when I consider how much precious time he is likely to lose over books whose sole recommendation is the title or the name of the author, and to read which is an irreparable waste of time and energy. I myself have lost only too much in this kind of reading. I was spurred by the idea that I ought to "keep myself up to date." In keeping ourselves up to date, only too often we do nothing more than listen to the interminable chatter of garrulous verbomaniacs.

PREFERENCE FOR GREAT BOOKS

If I were beginning my career now, I should resolve never during my youth to read any but great books, that is books which are the product of vigorous thinkers. I have paid dearly for my experience in much waste of time and energy, and to him who would attain true cultivation of the mind, I offer this counsel: Let him deny himself the reading of the innumerable books that appear in the train of the great books and are only a kind of rehash of them. These later works afford cor-

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rections only in unimportant matters. If we are too keen to keep ourselves in step with the tide of things we risk being swept away aimlessly in the current.

It is only when later we come to write something ourselves and we really have something to say, that we should exert ourselves to keep up with the tide of things. This can not be done except at a great expense of time and also with a great deal of irritation toward the chatterboxes who write without having a single individual thought.

Keep in mind always that the memory is a fragile instrument. Whatever reading we do is lost endeavor unless we read thoroughly and sum up concisely what we have read, and classify the result in such manner that we have it at immediate disposal.

The means toward a higher cultivation of mind are avoidance of wasteful effort, activity when it is need, and unfailing order. If we reflect we shall see that these things are above all the requirements of method, that is, of a thoroughly disciplined will.

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IV

METHODS IN VARIOUS BRANCHES OF STUDY

MATHEMATICS

By way of conclusion to this volume on will-power and work it would seem appropriate to apply the discoveries we have made to the various professional careers, which may be described as the regiments of the great army that little by little surrounds and captures the truth. But this would mean another book and one requiring considerable toil and skill to produce. Also it would be a book of subversive nature because our present methods of education, when examined in the light of the laws of the attention and of the memory, seem constituted for the service of mediocre minds and not of minds of vigor and originality.

The foundation of all intellectual training should be the study of mathematics. Lack of knowledge in elementary mathematics should be sufficient cause for disqualification

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in all examinations. An advantage about the study of mathematics is that it is not necessary to know a great deal on the subject in order to profit by its beneficial influence. Mathematics alone furnish the mind with a type of absolute proof. They alone afford us the conviction of the difference that lies between an affirmation that is proved and one that is not proved. Mathematics is the only science in which we do not depend on approximations and which is insistent on the requirement of exactitude.

Mathematical reasoning, which advances by successive steps, accustoms the mind to the prudent habit of the builders of our cathedrals, who before they lay one stone upon another must be positively sure of the plumbness and solidity of the stones already in place. What beauty there is in the structure reared up by a series of reasonings solidly joined, and what an impression of strength and harmony of equilibrium we draw from it. At the same time it must be remembered that untiring patience is required to move along calmly and surely from proof to proof. Here we have an admirable example of the education of the attention absorbed by ideas

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that pertain in nowise either to the senses or the emotions.

Persons of an uncultivated mind can not comprehend a demonstration when shown as a whole. They are incapable of the effort necessary to keep in the light of the attention the successive points of reasoning which fall upon the mind as a whole and in a single stroke. Their mental energy is exhausted before they reach the conclusion. They can not follow a sequence of deductions. They understand the first, are balked by the second, and are unable to attempt to grasp a third or a fourth, and consequently it is all the more impossible for them to make a synthesis of the various deductions. It follows that the education of the attention through the study of mathematics is of the highest importance because it obliges the mind to make the effort at synthesis, which merges several acts of partial attention into a cohesive whole simultaneously.

When the instrument of deduction is in smooth working order it may lead us into great error if we set out from false principles. Many there are who deduce correctly drawn conclusions from premises which are

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absurd. This is a dangerous form of madness which is called paranoia. The German philosophers in considerable number have suffered from this malady because they have lost the sense of realities and the logical products of this paranoia are, for example, Treitschke and Bernhardi.

It is to be observed also that the study of mathematics should be completed by lessons designed to show young persons the dangers involved in applying the practise of reasoning too rigorously to such orders of knowledge as are not susceptible of them. Descartes, the mighty genius who was the first to apply algebra to geometry, deduced from certain principles all the physical world; and yet has he not given, with the most abundant detail, a puerile explanation of the properties of the magnet? Is it not one of the weaknesses of our French genius that we are too impatient to endure slowness of observation and of experiment? Is not our whole system of education deduced from certain false ideas, the most pernicious of which is, that a child should have "some knowledge of everything."

But the abuse of the deductive method can

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not be imputed to education through the study of mathematics, as we hear it said so often. Absurd deductions proceed from unverified postulates and the study of mathematics does not accustom us to be content with meager matter of proof. Despite the example of mathematics, the natural tendency of the mind is to be easily satisfied, especially when our prejudices or our sympathies have any weight in the problem. It follows, therefore, that erroneous deductions are in no degree to be charged to mathematics, but to the essential duplicity of feeling which turns the mind on false principles and gives it satisfaction through the rigor of its reasoning in working out to consequences.

What a temptation there is to pride in explaining the world and affording the solution of all its problems. Pride is such actual intellectual intoxication that it is more than sufficient to affect the sense of proof. Among the Germans the intoxication of patriotic pride made Prussia the instrument of the old Germanic deity.

It is unfortunate that our methods of elementary instruction in mathematics tend to repugn the student, both by their abstract-

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ness and their dogmatism. These methods disdain concrete applications which so greatly help the young mind to seize the real meaning of abstractions, and instead of habituating it to discover for itself, they instruct the young mind with the discoveries of others. Such methods do not make proper use of the aspiration of the young mind to real effort. "After we had learned elementary geometry on paper," said the late Prince Kropotkin in his "Recollections," "we learned it anew in the fields with stakes, the surveyor's chain and then with the graphometer, the plain table and the land compass. After such training in the concrete, elementary astronomy offered no difficulties and land surveying became a source of inexhaustible enjoyment." Now abstract methods of instruction deprive the muscular memory of such recollections. By pursuing such methods we deprive our scholars of the pleasure of action. To teach in a book that an elementary proposition of geometry permits us to measure the distance between the earth and the sun is not so stimulating to the mind as to go outdoors and measure the height of a tree in the fields or of some inaccessible elevation.

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I urge upon those who study geometry by themselves to learn it in faultless fashion by working out in the open a multitude of problems of surveying, the height of objects, etc. In the workroom we learn through our muscles to solve a multitude of problems involved in measures of volume. Furthermore, the necessities of calculus and algebraic calculus lose all their uninviting character when we realize the practical results to be obtained through them. Then when the student studies his book and follows out the closeness of the reasoning his progress becomes rapid. Even if isolated in the depth of some village one can thus acquire the preliminaries of an excellent knowledge of elementary mathematics.

The evils produced by our abstract methods in the education of the mind are very many. How often it happens that we find people who can not distinguish that which they understand, that is, who can not see the proof of that which they admit. The paradoxical result is, as I have often pointed out, that the instruction of mathematics even for students of bright mind, is an instruction of faith and of authority. What the teacher

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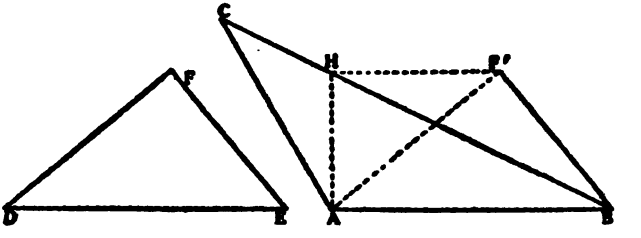
affirms as truth is accepted as truth. The greater part of books and courses of instruction in mathematics is dogmatic and does not make sufficient demand upon our reflectiveness. It is not only dogmatic but it is also dispersive. I take, for example, a certain theorem in geometry which is well known in our colleges.

THEOREM XXXIII



If two triangles have an unequal angle contained within two sides, equal each to each, the third side is unequal and that side which is opposite the largest angle is the largest side.

Thus the author begins. Let A B C, D E F be the two triangles in which we have C A equal to F D, A B equals D E, C A B is greater than D. I say . . . as a matter of fact I carry D E F over on A B C, etc.

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Not an instant of attention on the part of the pupil is summoned to consider the process of the demonstration, to know that a construction must be invented which permits us to confront F E with C B, which are not directly comparable.

We must find a device.

Let us carry D E F over in such manner that the base D E coincides with A B.

Now we must compare F′ B with C B.

Another device: the bisector A H permits us to find that C H equals H F′.

Now B H plus H F′ are necessarily larger than the side F′ B, therefore C B is greater than F. E.

But this device, the bisector A H should be found by the pupils and they should be set on the way to find it by showing the antecedent theorem implied in the solution.

All theorems ought to be presented as problems and the effect on the student would be aided by indicating the sources of the theorems immediately applicable, in order that discovery be suggested and that the problem be reduced to an ingenious but facile construction. Little by little the mind would acquire the gift of scent, and the

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instruction of geometry would cease to be for the majority of learners an instruction of memory and authority.

In this manner the student would always have before him the sharp perception of the force and beauty of the structure which patient geometricians build up in inventing device upon device in order to arrive at certitude. Even if later he forgets his geometry, it is not possible that the student's sense of candor would permit him to speak without proof.

HISTORY

Here we have not the time to consider all branches of study, but we can at least say that many changes should be made in the study of history. Students are overwhelmed with masses of insignificant details and of approximate information. In such conditions useless education flourishes. The triumph of the system is represented in those great historical enterprises in which, under the direction of a known historian, each contributor writes a chapter according to his ability. What is the result of such confusion? The cult of the fact is the cult of

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stuff and nonsense. What interests me is the investigation of causes, and unhappily in history there are hardly established laws. Fruitful hypotheses are rare because of the necessity under which the student learns history, and universal geography pulverizes his mind. If, as I believe, the great fruitful hypotheses which make a savant, a creative mind, are the result of years of meditation before his thirtieth year, the colleges, with their unreasonable demand for sterile and superficial universal erudition, prevent the slow ripening of original minds. Rather they tend to favor the acquisition of undigested knowledge which stifles the critical spirit and the creative force of thought. They also favor mediocrity and now that our historians have discovered that war was inevitable, we can perfectly well declare that they did not discover this fact before 1914.

It is of high importance that among our future professors of history there should be less development of the kind of erudition to which we are too much given and instead, a cultivation of the historical sense which is closely related to the psychological sense. Historical events should be felt like the

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events of our soul. The miseries and the triumphs of our ancestors are our own miseries and our own triumphs. We can not have sound judgment of historical events if we do not know ourselves well, because it is in ourselves alone that we have the experience of the eternal sensibilities of human nature. For example, it seems to me that liberty to think is indispensable for the progress of society, because I know by experience how indispensable this liberty is to my moral progress. Again if we lose sight of the realities there is danger that we stray into the limitless domain of foolishness. The problem of the distinction between liberty and license must be resolved in our own personal case before we can understand the struggle in history between the principle of authority and the principle of liberty.

We see in ourselves that we can not escape straying away from the path of reason except through attentive study of the laws of things and profound cultivation of the critical spirit, that is to say of the sense of efficacy. For example, we can only tremble for the fate of Rome when we learn

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that the upper classes in the time of Cicero received an education based on rhetoric of which neither facts nor the truth are the prime elements. None of the directive minds of the period understood the terrible menace that imperiled the Republic in the presence at Rome of 280,000 slaves who were demoralized because they had been torn from their country, their work and their family, and because all hope had gone from their souls. Soon fatalities in civil war completed the work of wars waged beyond the boundaries and contributed to the annihilation of all men of fine mind without their having elaborated a body of political and moral doctrines to take the place of an abandoned religion. The result was that after the civil wars nobody knew just why he was alive. All gave themselves up to their instincts. Thus delivered to their instincts, without firm juridical control, men become cruel and destructive. The strong oppress and exploit the weak.

What is necessary to bring out in history is the struggle of the oppressed in the effort to gain greater justice and a higher spirit-

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ual life. The late terrible war gives a meaning to the totality of history. Events—except those denoting growth and progress—of which some history books are full, form only a rigmarole of the same interest as is contained in family quarrels and the chronicles of cruelty and evil that fill the newspapers of the day.

By way of instance, I may say that Roman history after Augustus, which relates the madnesses of the Neros and the Caligulas and so many other idiot Emperors, is not worth an hour's study. The only important fact of this long period was the development of Christianity. This period did not produce a single genius of the first order, nor did it afford humanity a single scientific mind, discovery or advancement. It seems somewhat scandalous to me that a student knows even the names of Caligula, Claudius, Domitian and Commodus, yet I find no trace in several text-books of standing of the profound causes which made this period of three hundred years one of nullity in human progress. The consequence is that there is nothing to illuminate the minds of the young, no lesson that stimulates reflec-

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tion on their duties of citizenship or that trains them for action. Yet they arrive at their majority and they will become one of the links of history. Through their errors or through their clear perception of things they will prepare either suffering for their country or power and happiness.

LATIN

Our educational system is so removed from methods of observation and experiment that even in the oldest branches of learning, instruction is imparted in violation of the elementary laws of memory. As a consequence of this the most important of scholastic exercises,—translation into and out of the Latin language—is partly barren because of our constant haste and impatience. Over and over again I have observed, when I took up a translation which had been explained and corrected in class, that two weeks later the best of my pupils had forgotten the precise meaning of the important words, the shades of meaning and the felicitous words needed to render the Latin into our tongue. Often I found that they were unable even to follow the logical thread of the exercise. It is very

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sad to consider that in cases like this the teacher must admit that he has lost his time; and in my recollection such things have happened in hundreds of cases.

What is the cause of this lamentable waste of energy? The cause is a faulty method which, instead of affording us a constant weapon against the deeper deficiencies of our explosive and irregular nature, on the contrary tends to subject itself to our defective qualities. When I consider the thousands of inspections I have made, I find that the masters who struggled victoriously against the human infirmity of nervous haste can be counted in dozens. So much agitation and so much impatient striving can result only in a meager harvest of knowledge because neither pupils or teachers submit themselves humbly to the laws of memory. It is to be noted, parenthetically, that we can command nature only by obeying her.

We should not be surprized that the explanation of a translation done in such haste simply fades out of the mind in the course of a few days. It is done so rapidly that the result is merely a medley of remarks on grammar, observations on style,

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and some points of historical information. A little bit of everything, and nothing sounded to the foundation. Naturally the attention must be scattered. The accumulated results of this general haste in the procedure of learning disclose themselves in the examination for the bachelor's degree, when the brain of the candidates may be described as like a photographic film on which a nervous amateur has snapt two or three instantaneous pictures.

The student who toils by himself should select a page of a great and powerful writer whose logic is correct and whose thought is healthy. In this text the student must settle himself so that he understands the literal sense, can render the thought even to its most delicate shadings, can grasp vigorously the logic of the argument in process of development, and can penetrate by patient divination into the most intricate complications of the sense so that all possibilities of obscurity are banished. He must imitate the painter of talent who endeavors to transmit to canvas the purity of the lines in a human countenance and to discover the subtle logic by which they are

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united. When we have examined an author's thought we next advance to an examination of his manner of expression. By studying a characteristic passage we attempt to define his style.

As we go on with our work, we may compare it with the light afforded on the same passage by the declarations of a critic who has undertaken to appraise the style of the author. In this manner we come to realize that every assertion, no matter by whose name it is signed, is merely a hypothesis to be verified by proof, that is to say, from the text.

A moral and historical commentary, deriving from the text, should then follow. In all cases one or two remarks on grammar with reference to the rule are sufficient. To attempt more means to scatter the attention. These remarks on grammar will be furnished by the errors which cause a contradiction of sense and which we must trace to their origin.

As to the correction of written exercises, it is a delusion, for the true correction applies to the learner and not to his written

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exercise. He should be required to discover the cause of one or two errors. These causes he will set down in writing so that he corrects himself. To cover a written exercise with red ink is an easy task, and the apparent satisfaction afforded the teacher in such work is only a mechanical refinement, which demands neither intelligence nor reflection. On the other hand the true educator is he who can guide the learner to correct himself of this or that fault. This is only to say that he must do little, but that he must do it with scrupulous honesty and tenacious patience. It will be objected that this method demands too much time. Granted, but the result will be indelibly inscribed in the memory of the scholar and forgetfulness will not swallow up each night the result of the day's work.

I have often tried out this method and have found that even mediocre students are able to reconstruct from memory if a translation has been thoroughly explained to them. If it is true that the majority of students are unable to read a Latin text at sight after three years of study in Latin, the reason must be sought in the fact that

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the laws of the mind have not been obeyed. I have emphasized the importance of method in Latin translation, because as it is one of the most ancient of scholarly courses, it affords us the opportunity to see vividly how lacking is our educational system in the spirit of progress and experimentation. Generation after generation of students and teachers have succeeded one another and no one has ever cried out upon the absurdity of the traditional methods of hurry and haste.

The student who works by himself is more fortunate than the students in a class because he is free to break with the old faulty system. He can work slowly and fundamentally on his translation. If he has to translate a whole book he will move rapidly, but he will reserve his highest effort for a quota of the most admirable pages so that he is able to translate these as perfectly as possible. If he wishes to attain genuine culture he can do so only by working certain hours each week with profound energy.

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MEDICINE

We have only to glance through a medical review of the day to ascertain how very limited is the sense of proof in the case of most practitioners. Clinical observations are in general a mixture in which the characteristic traits of a disease disappear in a cloud of details common to twenty other diseases. In attending the clinic of some noted physician I have observed that each student follows him from bedside to bedside in order not to lose a word of what he says. This is a sheer waste of mental energy. In this fashion we see many sick people, but we do not make a study of any sickness. He who does not know how to confine himself within certain bounds does not know how to study. The true method of studying medicine is to follow the case of one sick person or two, to note day by day the progress of the disease, to consult the best authorities on such diseases and to endeavor in the case of each particular affection to draw up in outstanding lines the characteristic symptoms of the malady, while we at the same time eliminate all that

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is not essential in the consideration of these symptoms.

Many times I have seen medical students sound a sick person, that is, endeavor to discover any irregular action of the heart or of the breathing, without having known anything of the rhythm of health. It seems to me that their first business should have been to practise attentive and frequent auscultation on their brothers, friends or comrades in class so that they would have a knowledge of the normal rhythm of the heart and of the evidences of sound respiration in people in good health. Then when comes the time for them to examine a sick person they will be able to notice the slightest difference from the normal.

At the dissecting-table it seems to me that too great an appeal is made to the memory and an insufficient appeal to the reflective power of the mind. One would almost say that the students have not, as has the body they are dissecting, their one hundred and ninety-eight bones and their three hundred and sixty-eight muscles. It would seem that before every dissection it would be much more serviceable to examine

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one's own frame and reflect on the use of the members of the human body.

By such judicious reflection on one's own constitution one escapes overburdening the memory. Our body is always with us and therefore affords us the means to acquire the knowledge we seek. If I were a surgeon I would never perform an operation without having studied it out at length in the instance of my own organism. Medical students read their books of anatomy without ever referring to the living illustration they have in their own bodies. This is another proof of the tendency of books to make us unconscious of realities.

LAW

The study of law also makes an exaggerated demand on the memory. Law has become so complex and tangled, and it reflects social conceptions so incoherent, that it is impossible for a student to know it from memory. Nevertheless we continue to study law in the tacit supposition that this impossibility is possible. Law students should study law by practise, just as they will have to do when they are admitted to

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the legal profession as attorneys, counsellors or magistrates and must consider any question that comes up as a problem to be solved in accordance with the code, jurisprudence and reason. This is not done by the majority of law students who are content to receive ready-made instruction and to memorize it. In my observation of lawyers and judges, I have often noticed that many of them are too much inclined to seek the accommodating aid of a precedent or of jurisprudence before they deeply study a question according to the principle of the code and of reason. Now jurisprudence may in many cases be the offspring of prejudice, of haste, of the ignorance or of the triviality of certain magistrates and of the discouragement of a lawyer who has not appealed against an absurd verdict. Jurisprudence is worth just what the entire body of the magistracy is worth, and there we find many lucid minds of high attainments, but also, as in the case of all organizations, an inferior admixture of dull minds, disingenuous minds, or minds indolent or prejudiced.

Instruction in the law should make as little

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appeal as possible to the passive memory, because a practitioner of law never works without his books. As in all instruction in the higher branches of knowledge, it should be incumbent on the student to put his active faculties into energetic play. It is rather strange to consider the division that lies between the Faculty of Law and the Palace of Justice, which latter should be considered as the experimental laboratory for the study of law. After a method of instruction in law in which the theory and the philosophy of law remain abstract because the students lack concrete and living information, there comes the practise of law according to a method wholly different and which the great majority of lawyers enter upon with habits of passive acceptance. The practise of law is hardly ever vivified by the philosophy of law, because the practise has not struck its roots into the soil of the realities. It is comparable to trees which are transplanted when they are well advanced in growth and so often promptly die. Law students never have the sensation of the direct contact of an article of law with human suffering, human despair, broken and

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ruined lives. On the day in which they plunge into these cruel realities the leisure for long dispassionate meditation is no more, and in consequence it is impossible for them to construct a philosophy of law. This philosophy of law is only the flower of practise fructified by thought. Abstract theories, which are hothouse plants, die as soon as we try to transplant them into the crude earth of experience. Theories should be born of experience.

On the other hand, profound study of the evils caused through laws carelessly drawn and of the extreme difficulty of foreseeing the ill effects of such laws, should be required of all future lawyers, because law is a profession that has not greatly developed since Cicero. Now no more than in the days of the Romans is it based on the development of the scientific spirit. It is rare to find lawyers who devote themselves to the discovery and exposition of the truth. On the contrary they count on the indolence of mind of the magistrates or the emotional impressibility of the jury and cleverly dissimulate truth. They exaggerate, and so deform the facts useful to their case. Their

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rôle may be said to be analogous to that of the destroyer patrols which protect a battleship against submarines by releasing smoke-screens, for they have their own form of smoke-screen which is designed to prevent the court from clearly discerning the facts in a case. The law is a dangerous profession for the integrity of the mind if it is not counter-balanced by disinterested study of a science, an historic epoch or by the corrective of some literary effort.

PHILOSOPHY

On various occasions in the previous pages we have deplored the tendency of our educational system to aim to provide knowledge about everything. This objective is contrary to the education of the mind by investigation and discovery. The experimental method which consists in venturing on the obscurity of facts, aided by the light of a hypothesis, is repugnant to our impatience of mind, and the result is that we begin at the end instead of beginning at the beginning. We provide our students with the sciences in the comprest form of formulas, that is to say of words. Instruction in

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philosophy is a notorious example of this method. It should be a conclusion, a summary, or better the light that illuminates the thousands of experiences of the child. It should have been prepared for during the entire course of a person's education. It should not be necessary to teach students who have studied mathematics in what deductive reasoning consists. They should have a clear notion of deductive reasoning through experience. They should often have reflected on the fragility of any affirmation which is not analyzed and proved, on the difficulties involved in the criticism of evidence and on the insecurity of hypotheses. All education since their eighth year should have familiarized them with the capital importance of habit, the laws of memory and the struggle of the will against any inclinations of the feelings.

Moral truth should be evident to them and the study of moral philosophy should constitute no more than a general view of the entire experience of youth. But no such method obtains. Our students are plunged into the sea of scholasticism; and moral philosophy for them means the Cy-

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renaics, the Stoics, Kant, Bentham and Herbert Spencer. The discussions of these authorities hold little interest for students because they can not connect them in any way with their own moral existence. It is much to be feared that despite the terrible war which broke out in 1914, professors will again treat of the value of individual life according to Kantian formulas. These conceal the realities, so that we do not learn that the individual life is a small matter when compared with superior realities, such as the very existence of a nation's independence. This war has forced us all to realize that spiritual realities are everything, because without hesitation we sacrifice to them all material realities. It is to be hoped that the reasoning madness of verbomaniacs will be powerless to obscure this terrible lesson by scholastic abstractions. It is for our students in philosophy to face the realities, to examine them in all sincerity, and to refuse to permit their own personal experience to be distorted and hardened in rigid formulas. It is for them to provide us with a new and living philosophy.

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TRADE AND COMMERCE

A correct method of work is valuable not only in studying for a profession but also in preparation for a commercial and business career. The important point to remember is that we must consider seriously whatever we are engaged upon in order to eliminate all useless effort on our own part or on the part of others. The essential duty of the head of a business is to discover the aptitudes of the younger persons in his employ and to stimulate, help and advance those of talent, because all industrial and commercial organizations are in constant need of men of ability and initiative. According to the late Andrew Carnegie, the great secret of success as defined in his book "The Empire of Business" is: "Concentrate your energy, your thought and your capital. Once you have started along a certain line, decide to follow it to the end. Adopt all improvements, have the best machinery, and learn everything you can. Business organizations that fail are those that scatter their capital, by which I mean they also have scattered their brains.

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You should decide to know the business which is your livelihood, to know it to the bottom so that you can be an expert in your specialty. Do not allow any man in your specialty to know more than you do. Study everything that has been done on earth in your specialty. The wise man puts all his eggs in one basket and watches that basket. If he is a coffee merchant his whole attention is given to coffee, if he is a sugar merchant his whole attention is given to sugar and he leaves coffee alone. The only relationship that he maintains between coffee and sugar is when he mixes them in his cup. I have never yet met a man who was successful when he engaged in two different kinds of business."

It is evident from the foregoing that the experience of one of the great captains of industry accords with counsels that have been given throughout this book.

EXECUTIVE EFFORT

There is only one good method of work and this method should also be followed in administrative and executive posts. Unfortunately the great administrative depart-

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ments of the State are greatly inferior to those of great industry. because of the fact that too much reverence is paid to ancient ways and also to the fact that the inefficient factors can not be eliminated. The idle and the incapable employees of the State make progress as rapidly as do the more intelligent and active workers, and the consequence is that among the employees of higher intelligence a sense of discouragement gradually supervenes.

The head of a department should so organize it that it is relieved of all dead weight. He should possess a very mobile mind and one keen for the proof of experience. He should see for himself and have constantly under his control the efficiency of those working according to his orders, for the net loss of energy in any administrative work is startling. He must keep track of orders given as they pass from one stage to another and come in contact with various habitual conditions. Personally I can testify to the amount of time it took to do away with the absurd exercises of dictation in schools. But we must content ourselves with slight progress toward great

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reforms; and console ourselves with the recollection that no physician of more than forty years of age accepted the theory of the circulation of the blood when it was propounded by Harvey.

Furthermore the head of a department should hold it as an axiom without exception that a document which is not very easily classified and not immediately recovered without difficulty when it is needed, means that so much work has been done uselessly. If the person who has need of a certain document is unable to pick it out easily and without disturbance at the very moment he needs it, he may not take the trouble to secure this paper, either because he is indolent or too busy, and in consequence positive damage is suffered. No searches for necessary papers should interrupt work in course of performance. Whatever information affects the personnel under my orders is kept in a little file within reach of my hand in which are kept my notes of inspection, the notes of the inspector general, of the academic inspectors and of the chiefs of the establishment. Here also I write in their natural sequence notable incidents, deficiencies, proofs

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of industry and initiative. The result is that when the time comes for promotions or changes, or for the annual reports. within twenty minutes there lies beneath my gaze a complete list of all necessary information, including age, grade, professional competence, etc., which enables me to make a decision, to compare qualifications and so inform the Ministry. What is more, these documents reenforce one another and enable one to estimate the value of the appraisals of local directors. In consequence of this reenforcement the chances of doing an injustice are reduced to a minimum.

It is to be noted also that, when a subordinate comes to see me I can always answer his inquiry at once and extend whatever criticism is necessary, or congratulate and encourage him, as the case may be. How would it be possible to act in complete fairness if one did not have within immediate access the list of postulants received by each post, with the motives proffered, which we must weigh and analyze when we examine the respective merits of candidates. The heads of all educational establishments

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should have such accessible records about the students in their charge. Thus they are able to supply parents with a complete account of the condition and conduct of their children, of their growth and weight, their illnesses, their absence, their rank in class, the judgment of their divers teachers on the qualities and defects, on the intelligence, the sensibility, the will and the character of the pupils. It is easy to see what precious advice the head of an educational institution is able to draw from these documents in order to adapt the career of each individual to the profounder tendencies of his personality.

Leo XIII possest such a card index which he kept at hand. In this index he recorded, in a kind of shorthand, the conversations held during his audiences. The people whom he received on a second occasion were sometimes amazed when the Pope recalled to them the subject of their previous interview, which dated back perhaps ten years. Rigorous order in classifying this index and in keeping it classified from day to day, requires a firm will and an initial decision that we shall always note down whatever is

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essential and classify it. There is great security of mind gained in the practise of this method and day by day the time we save amounts to a considerable total. We can work without straining every nerve, or through convulsive effort, and with certainty, while at the same time we use our mental energy thriftily.

ORDERLINESS

The repose and security that is brought to our mind by a method of orderly classification enables us to avoid the inconvenience and irritation of having one subject encroach upon the time allowed for another, and also it prevents it from troubling our repose and our hours of leisure.

Everybody who so desires might make use of an arrangement conceived by Cuvier, of whom it is written: "For every work on which he was engaged a particular cabinet was set aside in which were deposited all books, designs and evidences on the subject. Everything was prepared and prearranged so that no outside cause could stop or delay the mind in the course of his meditations and investigations." Thanks to

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this impeccable order Cuvier was able to accomplish an enormous amount of work despite the number of his engagements and the variety and importance of his efforts.

This is the only way to keep the freshness of impression and the vigor of attention necessary in order that we may see clearly in the important decisions to be made. A director who does the work of his collaborators and involves himself in details can not direct nor survey the work and necessarily the lucidity and the energy of his direction no longer remain intact. Now the work of the mind, in which is realized the unity of action of great administration, is of a much higher quality than the limited work outlined for subordinates. This directive thought, immobile at the center of things, orders all the rest. In the midst of change, incoherence and general bewilderment it keeps the sense of orientation.

A man famous as a former mayor of the City of Toledo, Ohio, who later became the American Ambassador to Belgium, has written in his book, "An American of To-day": "Don't spend too much time at your desk, a quarter of an hour each day is sufficient

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—providing you have known how to find some one to do the work that you would have done." Let us concede the American humor in this remark. yet it remains true, that a chief should keep his brain fresh and clear. If he wears himself out with detail he is a mediocrity like Bazaine, who at Saint-Privat himself set up a battery and by performing the duty of a captain lost the battle which a general would have won.

The explanation is that months of quiet meditation are necessary to discover effective reforms and even to imagine the smallest successful change that will increase the output of labor. Let us remember the case of the Prior, who complained to the duke against the "idleness" of Leonardo Da Vinci while the great artist was painting the chapel walls (page 213).

In no field of activity, I think, is there so much pseudo-effort and pseudo-intelligence as in our administrative departments. A department head who really directs, brings to bear on his work harmonious method, perfect order and a sense of what is known in English as efficiency; and this is no more than a clear understanding that to produce

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a certain effect we must first find and then set in motion the necessary cause. At bottom, this is the profound sense of causality which marks superior minds and distinguishes them from the superficial. The first thing, then, is to discern efficient causes which one never discovers in one's office, but only in contact with realities and with those who live realities. When we have discovered these causes we must determine energetically, perseveringly and decisively that they shall produce for us their full results.

Here, as in all real work, wisdom consists in discerning the essential fact and in refusing to be diverted from it, so that all our brain force is concentrated on it and none is wasted in minor efforts that should be entrusted to others.

EXCELLENCE IS GOOD USE OF ONE'S GIFTS

The conclusion of the observations contained in this chapter is that veritable superiority is formed of the elements which every intelligent child possesses in its cradle. If we except some musicians and some mathematicians, who are on record as examples of a precocity no doubt exaggerated by

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persons of panegyric tendency, who love the marvelous, we find that intellectual superiority and genius are nothing more nor less than long-continued persistence and patience. Great men have always had staunch faith in the sovereign efficacy of work, and early in life they discovered the power that order commands. They did not divide their forces, as do those generals who court defeat, and as do those men in the paths of peace who for all their gifts of intelligence can not escape failure. Early in life they were saved from discouragement by the acute sense of the presence of the guardian angel whom in the earlier pages of this book we introduced as the Incorruptible Accountant. They were fortunate enough to discover that time is not merely a force of disillusion and of destruction, which accumulates ruins. Time, the redoubtable sphinx, devours those who fail to solve the enigma it poses to passersby. Great men were able to solve it and divine that all that was necessary was to banish any fear of the monster from their minds and to approach it smiling and with confidence.

To the distracted eye the course of time

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seems comparable to the invasions of the hordes of Attilla, which destroyed everything along their path. But to him who observes, it is evident that time does not destroy anything which has been built up with due regard for its laws. Great men discern what time respects and what it does not respect, and in obeying the law of time they are able to build up the edifice of their intellectual superiority. Just as we have tamed the wild lightning and harnessed it to our machinery, so men of genius beguile the untamable elements in time, and use them. The one and only secret of talent and genius is to have confidence in the fruitfulness of order and of work and confidence in the collaboration of time. In this sense it is true to say that genius is only a long patience and perseverance.

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CONCLUSION

THE CHOICE OF A METHOD

Once his preparatory school days are over the young man who up to this time has been surrounded with guidance and encouragement, finds himself suddenly a university student, alone in a great city and master of himself. It is a dangerous moment. At first he is, as it were, intoxicated with the novelty of his liberty. He is not conscious of the swiftness with which time flies, nor of the precious privilege that he holds in the several years of study which he can command only once in his span of life. While other young people of his age must work for their living, he, a favored child of destiny, has only to think of enriching his mind and his soul. Instead of being subjected, suddenly, to the contact of the hard reality of material facts, all that is asked of him is that he live in the intimacy of savants and philosophers, who are the élite of humanity.

But in the very earliest days of this new epoch he must make the pregnant choice which decides between two conceptions of

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work. On this choice his future depends.

A host of unreflecting students live their intellectual life merely along the lines of chance. They have not grown up, and have the defects of the infantile races, in that they are violent, impatient, lack foresight, are wasteful, and live as it were imprisoned in the present. For their guidance in life they depend on the drift and direction of every chance happening. They follow certain courses, take notes, and make use of their time as well as they can by mere guesswork instead of following the promptings of their personal aptitudes. It might be said of many students that they are merely machines for taking notes. To take notes, does not mean that they are working. It is a kind of servile recitation of the lesson, which the instructor himself recites from his books. We do not learn in remaining passive, but in striving and acquiring actively. The habit of passive listening and retaining what we hear is only pseudo-effort and can lead only to a mediocre intellectual life.

It is not along these lines that the student who has pondered upon the contents of this book will proceed. He will formally decide

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not to manage his life haphazardly, and will consider it an offense that any one should deem him capable of such procedure. He does not wish to be the toy of circumstances nor of his masters, for this is a species of servitude repugnant to him. He wishes to be a free man, independent and able to accomplish the purpose for which he was born. He is quick to take shrewd account of himself, to concentrate his energies, to realize and to develop his personality and to raise to the highest brilliance the obscure tendencies dormant within him. Thus he gradually produces a slow synthesis of his sensibility and his reason.

It may be that the ardor of his young energies will prevent him from doing all he wishes to do, but he knows that he can advance to the conquest of his own liberty through patience and persistency of intention.

It is not necessary to have exceptional ability in order to acquire solid culture. It is sufficient to make good use of the abilities we have. We all know of families with modest resources which are thrifty and prosperous. They rear their children up to advancement

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and success, and when age comes they are assured of independence and plenty of leisure. Other families with far greater resources live from day to day. Their children will have to make their way in life as well as they may, and the superior branches of study will be denied them for lack of means. When strikes the hour of age in the latter kind of family then come privation and poverty.

It is merely a matter of method. In the case of the first type of family we have described there was the ability to distinguish between what is necessary and what is accessory; and in the case of the second there was not. The first kind of family avoided foolish expenditure, costly entertainment, and the other did not.

The same holds true with our resources of energy and mind which may be just as easily dissipated. "If the vine," says Paul Louis Courrier, "can pass the flowering stage and not flow we shall be unable to store all the wine produced this year." Similarly, the student who is far-sighted knows that if his thoughts can pass the flowering stage and not go to seed, when

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the harvest comes, it will be impossible for him to exhaust the power of his affections, his love of work, love of family, his love of country, etc. In other words, if he does not waste his mental energy in a thousand different employments of no value and in a thousand and one hours of idle and haphazard reading he will have difficulty to know what to do with the superabundance of the intellectual treasures he will garner.

WORKING FOR A LIVING

It is to be remembered, however, that there are some students who can not afford to give all their time to their studies. Many instructors, professors, medical students, law students, engineering students, and many young women must earn their livelihood in occupations which consume a great part of their energy. Such as these are prone to lose courage and to let themselves drift. Their sense of discouragement is intensified through the error they make in esteeming too highly the opportunities of those who do nothing but follow the courses of a college term. They overlook the fact that this good fortune has its reverse side

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in the dangers incurred by those who are so much aided in their studies they can not resist the laxity of passive labor. It is a law almost without exception that the will power of young rich people is subject to a decomposing process. Carnegie, who published a book on the causes of success in business, was so convinced of the evil influence of riches that "the sons of partners or their relatives" were not admitted into his factories and had no say in the direction of his business; and it pleased him often to repeat the remark of President Garfield that "the richest heritage a young man can possess at birth is poverty."

My own experience enables me to state that the same holds true of the higher education of the mind.

It has been remarked that in Germany the greatest discoveries have been made in the poorest laboratories. The ultimate product of these laboratories was found far superior to their equipment and appliances. This is explained easily if we consider that the lack of equipment and appliances acted as a stimulus to excite in the experimenters great sagacity and inventiveness. A con-

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firmation of this statement is found in the enormous advantages of American laboratories as compared with the German, and the slender American output of discoveries of the first order.

To cite my own experience I have found that as long as I was surrounded with means of assistance in my work, I neglected every other effort except the effort of memory. It is my profound conviction that I should have continued along this smooth but mediocre path if it had not chanced that one day I found myself without any aid, and, as it were, cast into the sea and forced either to sink or to swim. I might mention many names to prove how great is the number of young persons of talent who fail to achieve any result of value because the vitality and energy of their intelligence has been enervated by too great a profusion of aids.

It may be said that the will only gives us full strength when it is warmed up, and if it is allowed to grow cold and feeble we have all the trouble to stimulate it again into action. Moreover, those people who have too many means of assistance are especially given to rely entirely on the memory

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and so allow the will to languish. It is so arduous to restore its vigor that gradually such people become incompetent.

Those who are forced to work in self-support seem at a disadvantage because of the amount of time required each day by their paid employment. But it may be this loss is compensated by the fact that their will power is kept in constant activity through the necessity of their daily task and that thus it is always sufficiently stimulated to make high will pressure a matter of habit.

It follows, therefore, that young people who are obliged to earn their living should not allow themselves to be discouraged, for it is to be questioned whether their lot is not the happier one. Often I have remarked that young professors from the provinces are superior to their colleagues who have been over-stimulated in special schools; and if examinations re-revealed not facile brilliancy and pseudo-effort, but the essential qualities of the mind, this would prove to be the case almost without exception.

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ADVANTAGES AND DISADVANTAGES OF A GREAT CITY

If it is our lot to live in a small town, we must guard against exaggerating the advantages of a great city. The advantages of a great city are considerable for the development of an artistic career because of the museums and great classical concerts. For the study of sciences, the great city offers its laboratories and its libraries. Above all the great city offers the opportunity of meeting warm-hearted comrades who are engaged in the same studies as you are and who stimulate your thought by their discussions. Unfortunately the great city of France affords but one example of fraternal collaboration between masters and pupils, and this is the Pasteur Institute. There is nothing in our universities comparable to the cooperation and mutual aid that were the practise at Port Royal, and in the studios of the great painters and sculptors of Italy. In a previous chapter we have deplored the fact that such cooperation as this no longer obtains.

But no matter what the great city has

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to give a student it does not compare with what he can provide for himself. No one can exercise will power for him, and, what is more, no one can help him in his intellectual development. It is good to have been to Paris, but in my view the highest benefit is that we there make the capital discovery that no one can help us. Moreover we learn that all help contains an element of danger, for by accepting it we incur the risk of limiting the entire effort of our energy. No one can exercise will power for us, no one can work for us, no one can think for us. We all must gain our own salvation; and we must all earn by the sweat of the brow the bread of the mind and the soul. As long as we have not made this discovery, and count on the aid of others, which never comes, we never settle down to work thoroughly. In a laboratory we can learn only the technic of a calling; and if we have a quick mind this knowledge is soon acquired.

But for all its advantages, life in Paris has equal disadvantages and the most dangerous of these is distraction and waste of time. The loss of time in moving hither

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and yon is enormous. Life in Paris is feverish, nervous, and continually re-stimulated with novelty and adventure. The mind simply evaporates in the constant attention paid to minor things. Superhuman energy is needed to resist such dissipation. Time, long, patient meditation, and silence, are not to be found in Paris by those who allow themselves to be caught in its whirlwind, just as they can not there find pure air, healthful walks and deep undisturbed sleep at night.

It must not be forgotten, moreover, that life in Paris is very expensive, and that an immense number of young persons of talent there exhaust their strength because they have to do so many odd jobs to make ends meet. If the wife does not resign herself to a life of heroic poverty, her husband, whether writer, painter or illustrator, must work himself to death merely to "live." More deplorable and more tragic is the fact that in only too many cases he is confronted with an impossible task when he is married to a vain woman whose chief desire is for a life of show. His talent is

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driven to superproduction because money must be got. . . .

The waste of time in Paris is terrifying, and to realize that time has no real value for the Parisian we have only to consider the unnecessary losses of time he submits to because of mismanagement in departments of the government, at the entrance of theatres, in railway stations and elsewhere. A French manufacturer who has a sense of organization, a Mr. Citroën, manages to have thirteen hundred employees paid off each Saturday in eight minutes. He pays only in round sums and what remains due is carried forward. He has arranged pay windows for eighty, for ninety, for a hundred and for a hundred and twenty francs and every pay-check bears the color of its proper window.

MUCH LEISURE NOT NECESSARY

It is unfortunate that the problem of intellectual effort is complicated by a most discouraging prejudice. This is, that long hours are necessary for opulent productiveness of the mind. Gifford, a famous editor of the London *Quarterly Review,* declared that

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an hour of improvisation in the intervals of obligatory work is worth more than a day's effort of the man who does nothing but write. . . .

In very truth, writing is a painful task. The necessity of drawing upon the resources of one's brains for composition is nerve-racking if we are obliged to do so for a living. If this work is not spontaneous, and if, as happens in the case of the journalist or the critic, one is obliged to produce even in those moments when mental energy is not at the full, the result is the work of a slave and is utterly lacking in spontaneity. Without doubt it is of this kind of work that Brunetière was speaking when he compared it to slow suicide. An hour of free, spirited, spontaneous and joyous toil, as far as inspiration is concerned, is worth days of slow drudging as a slave. So it will be seen why in pursuing a literary career it is better to gain one's livelihood as a professor or an employee in the government service than to do so through the exhausting practise of hackwork.

Every professor and every civil service employee can find two or three hours of

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full intellectual spontaneity which enable him to create great works. Cicero was a lawyer and a politician; Bacon was a minister of state; Rabelais was a physician; Descartes was a soldier; Newton and Herschel were directors of the mint. John Stuart Mill was an employee in the bureau of Indian affairs, and Grote, the historian of Greece, was a banker.

There is plenty of time for serious work ordinarily, if we are wise enough to eschew mediocre amusements and wasteful occupations, and if we are capable, which is a rare talent, of protecting ourselves and our time against the persistent and ingenious intrusion of those who do not know what to do with themselves and so pester persons who would work, just as flies pester them.

I make particular note of the necessity of taking full advantage of the time that is at our disposal. Our country has suffered much because so many physicians, lawyers, magistrates, professors, instructors and civil employees are convinced that an avocation requires a great number of hours each day and such enormity of effort that their regular occupation puts it out of the question. At

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the end of the day they lay aside all thought of the special line of work they might do because of their position and advantages. In the provinces we still find savants and artists who know how to make full and proper use of their energy and opportunities. One such will devote all his leisure time to some historic question, and the other to the study of some great man. I know an artcraftsman who is a landscape painter of high merit. Others study a family of plants or of insects. But these modest men, piously consecrated to some work of long duration, which is a spiritual refuge against the monotony of existence and the inevitable griefs of life, are unfortunately few in number. . . . In the foreign press are published works of great value, the translation of which is well worth the attention and intelligent toil of young men or women who wish to spend the long evenings of winter in profitable occupation.

Each one of us should proportion his task to his strength; but is it not painful to consider that of all the instruction we have spread about us everywhere the results are so small? This happens undoubtedly be-

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cause our educational methods do not prepare our minds for disinterested work. If one looks about him in a small city he is surprized to discover that the majority of those of the liberal professions do not concentrate all their intellectual energies on their profession; and that physicians, magistrates and professors gradually sink into a purely machine performance of their professional duties. The unfortunate part of it is that if we do not work constantly to improve ourselves we soon become inferior to the demands of our position. We can not keep ourselves in good form except through the habit of tireless attention to what is being done, through constant observation, through the test of personal judgment, of reflective methods, through the search for the profound order in things and through the courage of clear-sighted reason. By such observance alone can we keep our liberty of mind and the attitude to seize facts in their entire significance.

When men of character, of lucid intelligence and the habit of efficient effort become numerous we can break the tyranny of the state and manage our cities and our

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communities scientifically. Then they will recover the liberties they enjoyed in the Middle Ages and will be set free from the trammels of politics. To attain this end we must have men formed by intellectual effort in the severe system of historical criticism and scientific investigation. Only these two factors can develop in harmonious equilibrium the vigor of united thought and prudence in statement and in action.

THE DUTY OF SHOWING EXAMPLE

Of course not every one can pretend to exercise the mighty influence of great men. Writers such as Montaigne, Descartes, Auguste Comte, scientists such as Geoffroy Saint-Hilaire, Darwin and Pasteur have an immense influence on the future of humanity. Mr. Frank Harris remarked on the occasion of the coronation of the King of England that: "Nowhere in the procession did there appear one of the men who are in truth glories of England and the masters of her best destinies." There was a host of politicians and dignitaries but none of the men who stir the mind and inspire it with new thoughts, with new beliefs, with

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new artistic forms, none of those who offer the world discoveries and inventions. At the coronation of King James I, Shakespeare appeared in the procession as a servitor and some one gave him a cloak worth six shillings in order that he might be presentable. To-day Shakespeare towers in the height of his genius above all the dignitaries and the king of those days.

If Rodin had not lived we should all be much poorer. He has taught us how better to understand our cathedrals. He has given us the example of artistic probity, and, above all, he has given us a magnificent illustration of the grandeur and the beauty of a life wholly devoted to work. He has revealed to us the savor that each one may give to his destiny in spiritualizing it by labor and earnest meditation.

It is rather annoying to recall that the real men of action, the revolutionaries who convince minds, who bring on reforms by making them desired of all and every one, are usually unknown. During the time of their activity the public scene is too noisily occupied by the theatrical type of politician, journalist and popular scribbler.

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It is really distressing to see these mediocrities encumber even the pages of history with their pretentiousness. But fifty years later what a change there is in the perspective. Who knows the name of the English prime minister who was vocal and gesticulatory before the world in the year when appeared "The Origin of Species"? Who knows the name of the premier of France who held the reins of power in the year when Pasteur discovered his vaccine for rabies.

Without aiming at the highest rôle in the drama of the day, each one of us can exercise the force of his personality and ability in the responsibilities devolving upon him. Each one of us by his example may give more wisdom, more strength, more happiness to others. The influence radiating from a healthy, well-balanced and noble mind is strong and beautiful on those within its contact. All we need in the service of the people is an honest man at the top to have all disloyal hearts stricken with conscience made fearful. Uprightness bears a magnetic influence.

Inasmuch as physicians, magistrates, pro-

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fessors and the like have an influence of communication they should acquire nobility of character. After this terrible war, in which we have been saved by the heroism of the crowd, each one of us will be held responsible by the community according to his knowledge and his intelligence. Each one of us should work in efficacious cooperation at the great task of national reconstruction.

The first duty of every Frenchman worthy of the name is to bind himself resolutely to the tradition of our admirable ancestors, who built our cathedrals, of our thinkers, our poets and our great artists who have created the soul and intelligence of France.

The tradition which has made France so rich in beauty and in grandeur is the tradition of the highest moral and intellectual qualities. These are persevering courage and an intelligence which allows one to see through prejudice and through appearances down to the very reality of things. These primordial qualities are all at command if we follow a methodical procedure of work. Work well done gives us the decisive verdict on a man. From the quality of his

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work we may judge of his real intelligence, his real character and his real morality. The same axiom holds true of nations. The greatness of French civilization, the extension of its colonial empire, which stretches out on a section of the globe's surface larger than Europe, is the proof of the qualities of energy and method inherent in the French nation. The victories of the Marne, of Verdun and of the Somme are the reward of a long past of wisdom and will-power.

If we look into the depths of things we shall find that the essential value of French genius is its love for work that is well done. Thus it happens that our builders of cathedrals brought scrupulous conscience to their task. They neglected nothing even to the least details, for, if perfection is made up of minor details, perfection itself is not a minor detail. They all worked with such happiness and unselfishness that they never even thought of graving their name in the stone and so their names are unknown to us.

With the same patient toil the French peasant has cleared away forests, drained marshes and cultivated the smallest little

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bits of land. The attraction of cities with their empty, agitated life, where the transplanted peasant learns the doctrines of sabotage, which are the practical form of the German war on French genius, tends to diminish this instinctive national desire for work well done. We may say that what foreigners consider excellent in French taste is the care for perfection in the last detail. The reproach they lay against us of being logically minded is only a witness to our intolerance of all that is incomplete, confused or obscure. Our great classics in all the arts have this care for exactitude and for truth. Let any one who will, study in Corneille the admirable heroic expansion of the will-power of *Pauline* who is entirely submissive to duty, and the discovery that she could have nought to do with the irremediable mediocrity of the satisfactions of vanity, high station or mere physical comfort. This discovery was made on their own account by the hundreds of thousands of our young men who died at the front.

In re-reading the "Meditations" of Descartes one observes how this admirable Frenchman through his power of logic came

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to the conclusion that the exterior world has no existence except in our thought. This discovery was the point of departure of idealism. It transforms our conception of the world.

Compare by way of contrast work that is badly done, ponderous, illogical and incoherent in the product of the most powerful German brain, that of the philosopher Kant, who by a kind of *coup d'état* re-established in philosophy the dogmas of his childhood. He was unable to see that thought is the foundation of things, that it is, before everything, order and immutable law, and that the moral law must be founded in reason. Kant introduced duty by an act of irrational belief. He was unable either to deduce from reason or to build upon experience.

Whenever power to organize and men of valor have been in demand France has elicited the admiration of the whole world. What do we not owe to the union of savants and an enthusiastic army commanded by the most efficient officers in 1792? Under Napoleon I, who was unhappily afflicted with vertigo about the year 1800, this period was an epic in events. Similarly after the cruel

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awakening of the defeat of 1870 France reapplied herself to work and in a few years had paid an enormous debt and had built herself up anew. After the victory of the Marne, in the two years following, France created a mighty industrial organization such as it took Germany twenty-five years to bring into being. This organization built up in the actual days of war will, when it becomes known, evoke the admiration of the world in the same degree as did the victories of the Marne and of Verdun.

But we must remember also that when the country has been wanting in efficacious methods of work it has always been in danger. For example our parliamentary routine, the safeguard of our liberties, is not organized with a view toward efficient work. A parliamentary contributor to the *Revue de Paris* writes as follows:

"Let us go through the corridors [of the Senate and Chamber of Deputies] and observe closely. We see tired and weary agitation and excitement rather than joyous activity. Weariness is read in every face and this weariness proceeds less from idleness than from the dispersal or the poor

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management of work. We come back home at night worn out with a particular kind of fatigue that I have never been able to explain to myself. I think this fatigue is due not so much to the bad air or to the fact that we have been obliged either to stand up or to sit down for a long period of time than to causes of mental dissatisfaction. We have done our work and yet we are discontented with others and with ourselves. An impression of dispersal, waste and discord overshadows all other impressions and blots them out."

The absence of organization in parliamentary procedure and in the departments conveys to the nation a disturbing sense of the powerlessness of government. What is more, it is liable to set afloat absurd Caesarian tendencies in some minds. These tendencies are absurd because they turn the attention away from the one essential question, which is the intelligent application of capacity and energy. It is doubtful whether a Ceasar could be other than a demagog, a theatrical figure, and that he would agree to modest reforms which are at the same time profound and effective. Like great causes great

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reforms are silent in their working. They require time. Now silence and time are frightful in the minds of violent natures, which are always possest by vain and showy people. A Caesar would not better our affairs, but would rather make them worse.

The lack of organization in the medical service was positively criminal in the beginning of the war. Nevertheless, in the midst of its appalling drama methods of work were improvised and after two years and a half we had an excellent organization. The lack of organization is still very great behind the lines, where old military leaders are not quick enough to make use of talented hands. How many officers there are who would be much better placed in factories or in the fields.

Even in universities we find a similar lack of cohesion and combination of effort and no critical spirit constantly occupied with verifying results. If there were such organization great things might be accomplished at universities where the personnel is of high grade and unselfish and devoted in work. But, unfortunately, the effort of the professors is no better organized than

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the effort of the students. As the inevitable consequence there grows up among teachers and scholars "discontent with one another and with themselves, and an impression of scattering inutility and discord." This is inevitable when every one is doing as much as he can, and the result nevertheless remains inadequate.

SELF-REVOLUTION

This state of things is the more deplorable in that very little effort would be required to bring into action the admirable reserves of the intelligence of our country. It would be necessary only that there be at the head one qualified to re-organize political and administrative work. What a mighty nation we could then become.

But we must not forget that our advice is designed particularly for those who wish to learn. The re-organization of the national functions is not their immediate affair. Their business is to effect a revolution in themselves. A revolution that shall bear fruit must always be profound, and as such it exacts calm and patient study of the realities, according to which we must

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measure our work. Then there must follow the decision to discard all defective practises. As we conclude this book it becomes plain that the two essential conditions of intellectual work are first, to avoid scattering our effort and second, to avoid the fixt idea or monomania about work.

The scattering of effort is the greatest menace at the present time. In each generation thousands of minds that might enrich the nation are only beautiful flowers which produce no fruit and die. But we must remember also that there is danger in joyless work—work without spontaneity, without leisure, and which becomes transformed into a kind of mania. We can do nothing well without a good brain and, as we have said, a good brain implies intelligent administration of the body.

Let us therefore keep our bodily energy intact by reducing to the minimum long periods of sedentary occupation and confinement in rooms that are overheated or badly ventilated. As the young Spartans were trained to look upon the drunken helots in order to inspire them with a disgust of alcohol, so the young student should

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consider as warnings the producers of intellectual rubbish, who are white and pale with age, have thin shrunken arms, stooped shoulders and hollow chests and are half blind. In a word, they are marked by the deformities of a man who is constantly seated and whose blood is stagnant as water in a marsh. Consider whether you wish to aim at such an ideal, and remember that you are a candidate for such a miserable future if you do not reduce to a minimum the period spent in sedentary occupation and by energetic concentration bring to your work an activity of mind that is at once fresh, healthy and joyous. Avoid that maniacal form of intellectual gluttony which impels people who have no will-power to devour books, reviews and newspapers in such number that they completely dissipate their intellectual energy.

It is not only your physical health that you must safeguard, but you must also safeguard the health of your sensibility. Pedants, who are imprisoned in their studies of pseudo-effort, becomes conscious gradually that their vitality is falling lower and that their disposition is becoming acidulous.

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They never have time to go and see the cherry trees in blossom. For them nature lavishes her enchantments in vain. They still remain fixt at their table. Their circulatory system is slow and heavy, their brain dull and their whole spirit without uplift. By their very presence they lower the moral temperature all about them. They are ill-tempered because they are not in good health and they are positive killjoys for their wife and children. They never have the time to be affectionate or to exert themselves to create a little gaiety and happiness for others.

Morose and irritable, they bring a melancholy atmosphere into the house which makes life intolerable. "German pessimism," says Nietzsche, "is essentially winter languor, not forgetting the effect of the close air and the poisonous fumes of the stoves in German houses." Heavy and pedantic erudition, which produces much smoke and very little flame, is of the same nature as those digestions which are in perpetual labor and effort.

To the young French student I urge the maintenance of the great quality of his

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race, namely, alert action; also I urge him to go listen to the singing of the birds and to leave his work before fatigue comes upon him, so that he will return to it gayly and with all his energy, and that he will bring to his parents and later to his wife and children the laughter and perennial youth of the healthy worker.

KNOW YOUR OWN MIND

In Upper Ardèche there are certain springs which seem to hesitate between flowing toward the Loire or toward the Rhone, and to seek a choice between the Mediterranean and the ocean. A choice equally decisive must be made at the opening of the life of each student and it calls for fine decision. He may choose an incoherent life, subject to external circumstances, subordinated to powerful protection, to happy friendships, to relatives, to intrigues, with a precise aim, that of making money. But if he seeks within himself for support, if he seeks happiness where it lies, that is in defined and regulated activities and in an effort conforming to his profound tendencies, if he seeks to develop all that is noble in his

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character, to broaden and intensify his power of sympathy for nature and for men, he chooses the more beautiful destiny, but one which he must accept in its entirety. Do not do as people of weak will, who buy things on credit because the merchandise allures them, but who later are irritated when they have to pay for them. If you resolve to live as the best and most noble of men have lived, accept the inevitable condition of power and of influence, which is to know poverty and long years of silent toil. Time which cherishes those that respect it, will repay you with its habitual generosity; but you must not even think of the victory that is to come. Make yourself like the innumerable heroes who defended France in the trenches. Acquire the habit of laughter, of a serene and lucid life, and keep the flame of enthusiasm aglow in your soul. This will be easy for you who are asked to live only in the company of great writers, great artists, scientists and philosophers.

We hear of beautiful examples of unselfishness and of the epic spirit of the armies of the Revolution to whom acts

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of wonderful bravery seemed perfectly simple. Epic also was the soul of our fighters in the great war. The striving toward the best in life, the energy which comes slowly into light, the absence of all hope of external recompense—because the true recompense proceeds from the action itself—in these consists the secret virtue of the great. It is the duty of all who are privileged with the happiness of fully freeing their intelligence, to cultivate in themselves this epic state of mind, which alone makes possible the conquests of the laws of nature and the struggle of the flower of humanity against ignorance and barbarism.

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